Nucleotide	Description
1-1542	16S rRNA of *Escherichia coli* rrnB operon
1536-1540	16S MBS (message binding sequence) GGGAU
1543-1982	16S-23S spacer region
1983-4886	23S rRNA of *Escherichia coli* rrnB operon
4887-4982	23S-5S spacer region
4983-5098	5S rRNA of *Escherichia coli* rrnB operon
5102-5145	terminator T1 of *Escherichia coli* rrnB operon
5276-5305	terminator T2 of *Escherichia coli* rrnB operon
6575-7432	*bla* (β-lactamase; ampicillin resistance)
7575-8209	replication origin
8813-8622	*rop* (Rop protein)
10201-9467	GFP (Green Fluorescent Protein)
10213-10209	GFP RBS (ribosome binding sequence) AUCCC
10270-10230	*trpc* promoter
10745-10785	*trpc* promoter
10802-10806	CAT RBS (ribosome binding sequence) AUCCC
10814-11473	*cam* (chloramphenicol acetyltransferase: CAT)
11782-11859	$lacI^q$ promoter
11860-12942	$lacI^q$ (lac repressor)
12985-13026	*lacUV5* promoter

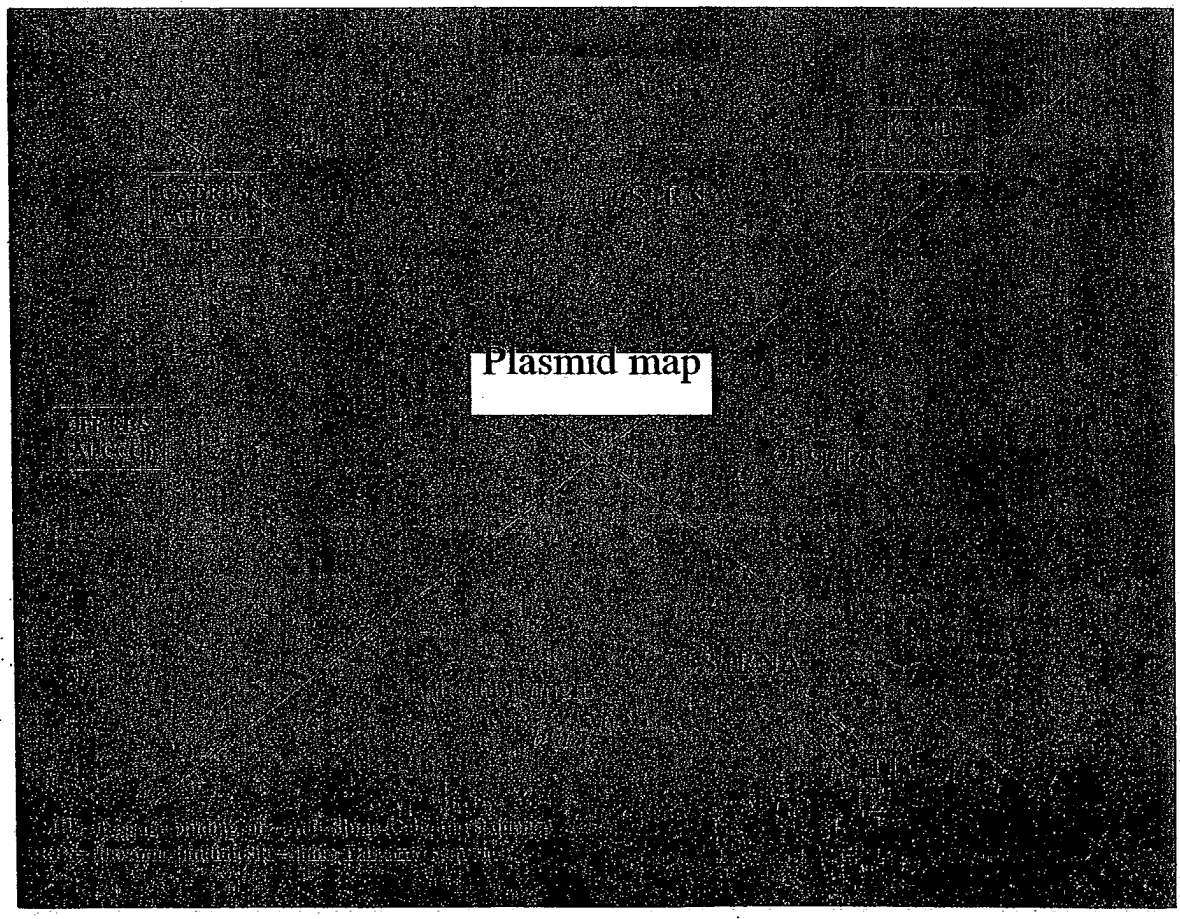


Figure 1

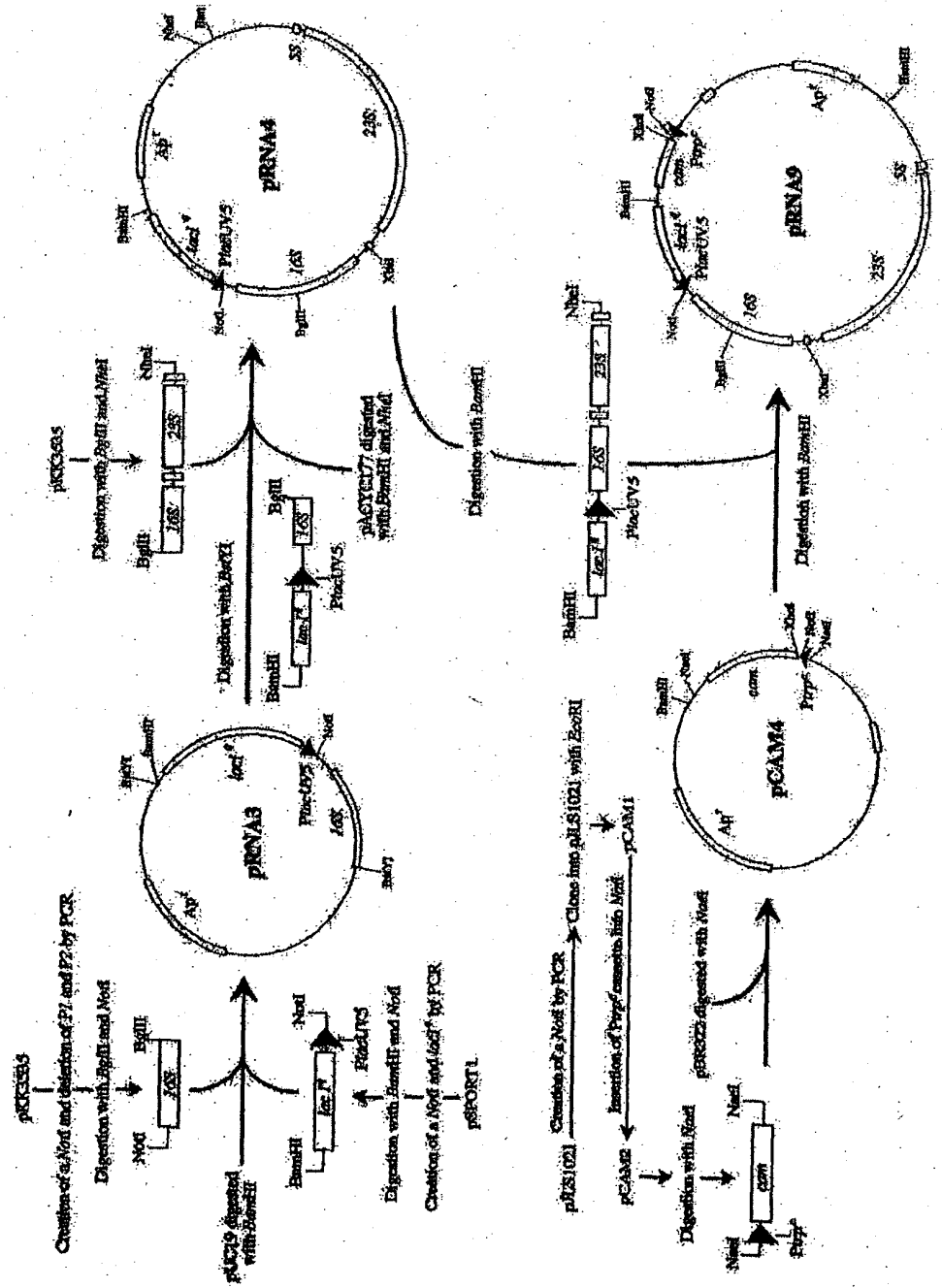

pRNA4
pRNA3
pRNA9
pCAM4
pCAM1
pCAM2
pSPORT1
pUC19 digested with BamHI
pACYDC77 digested with BamHI and NotI
pBR322 digested with NotI
Digestion with BamHI
Digestion with NotI
Digestion with BglII and NheI
Digestion with BglII and NotI
Creation of a NotI and lacI' by PCR
Creation of a NotI by PCR
Clone into pUC19 with BamHI
Clone into pUC19 with EcoRI
Insertion of Prpf cassette into NotI
Ap'
lacI'
T7 pol
T7 term
Prpf
cam
Bam
Not
Xba
Nhe
Bgl
Eco
Sac
Sph
Pst
Hin
Kpn
Sma
Xho

Figure 2

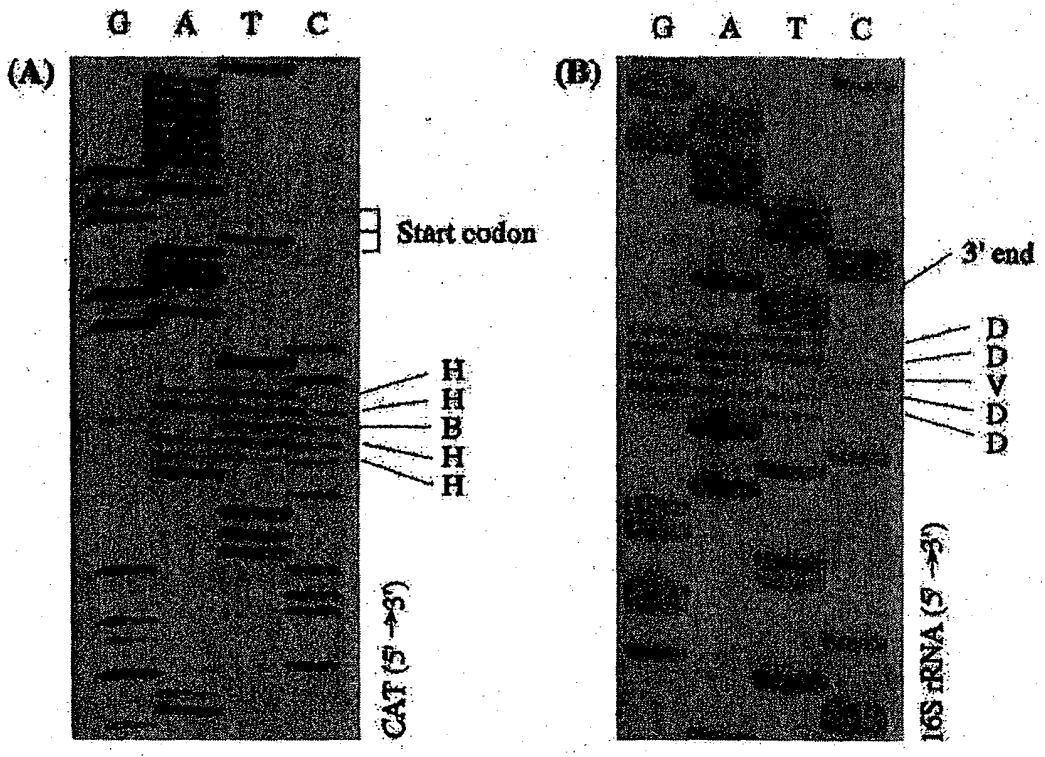


Figure 3

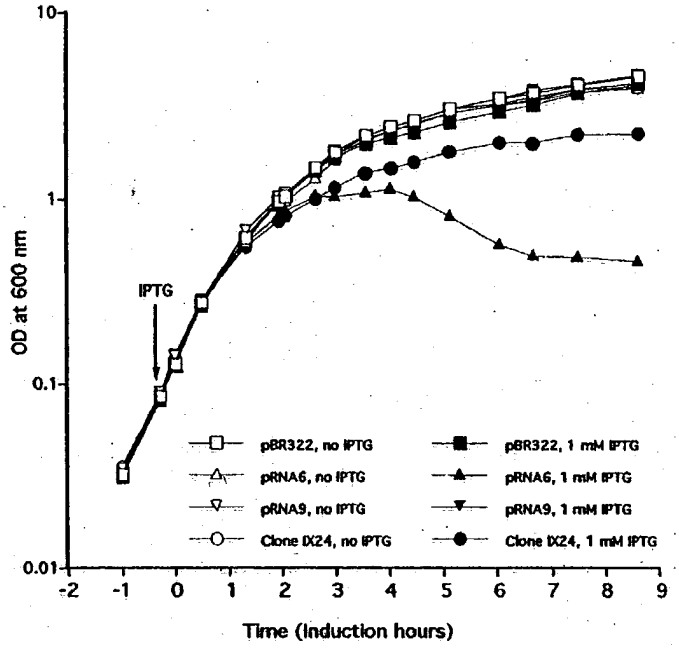

10
1
0.1
0.01
OD at 600 nm
IPTG
pBR322, no IPTG
pRNA6, no IPTG
pRNA9, no IPTG
Clone IX24, no IPTG
pBR322, 1 mM IPTG
pRNA6, 1 mM IPTG
pRNA9, 1 mM IPTG
Clone IX24, 1 mM IPTG
-2
-1
0
1
2
3
4
5
6
7
8
9
Time (Induction hours)

Figure 4

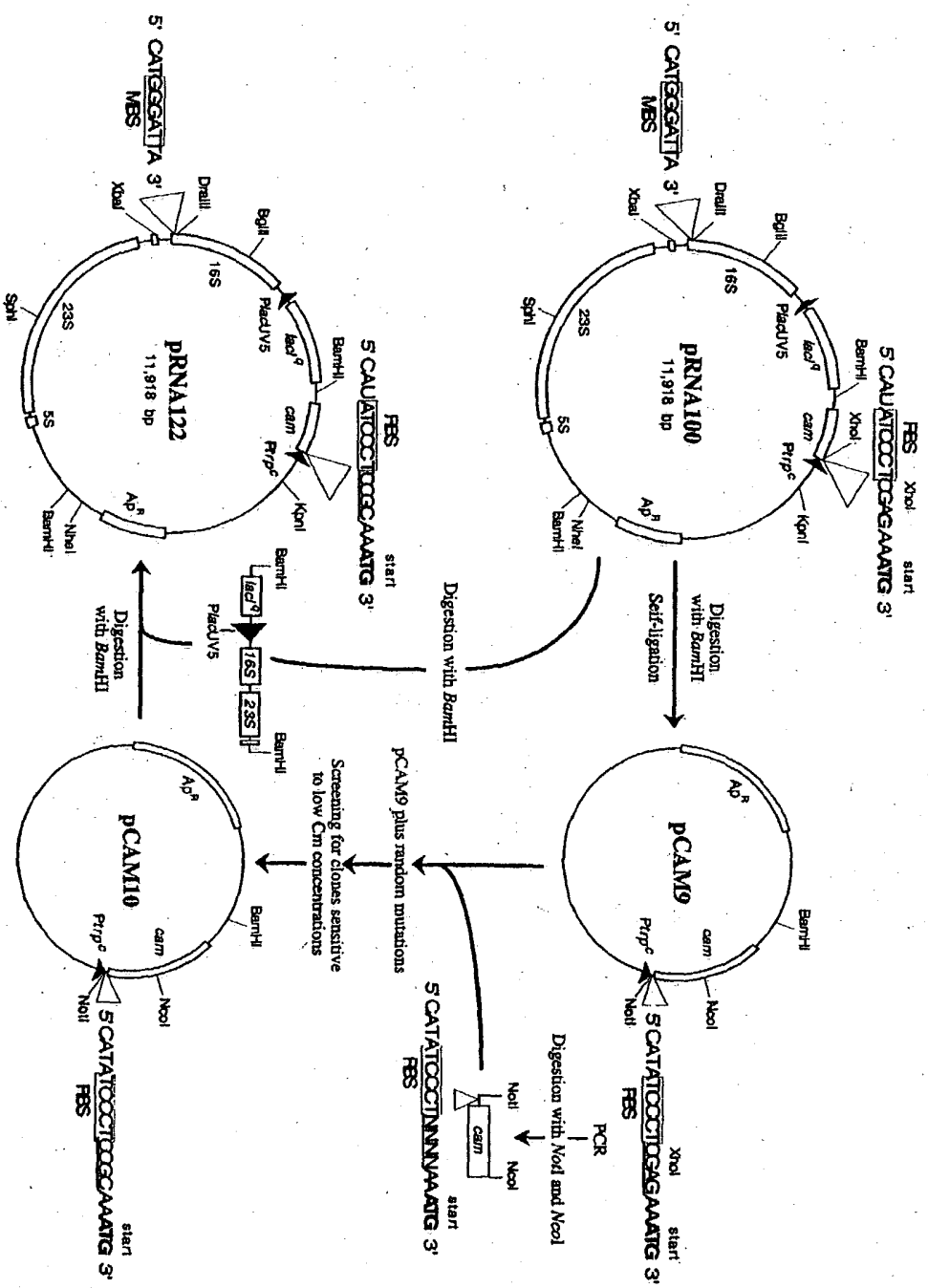

pRNA100
11,918 bp
pRNA122
11,918 bp
pCAM9
pCAM10
Digestion with BamHI
Self-ligation
Digestion with BamHI
Digestion with BamHI
PCR
Digestion with NotI and NcoI
pCAM9 plus random mutations
Screening for clones sensitive to low Cm concentrations
RBS
start
MBS

Figure 5

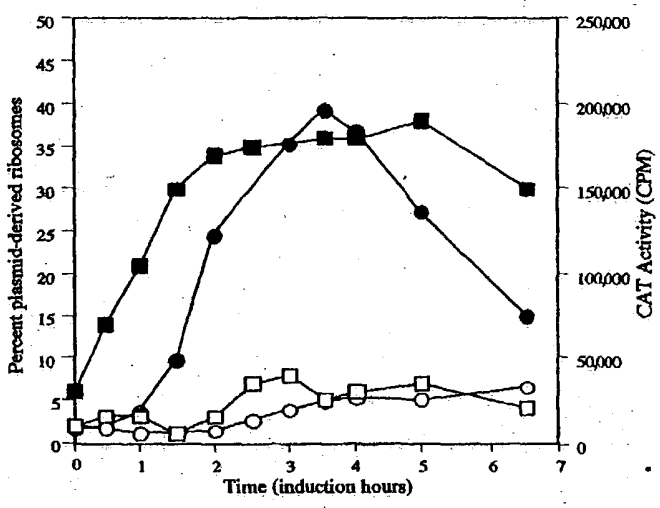

Percent plasmid-derived ribosomes
CAT Activity (CPM)
Time (induction hours)
0
5
10
15
20
25
30
35
40
45
50
0
50,000
100,000
150,000
200,000
250,000
0
1
2
3
4
5
6
7

Figure 6

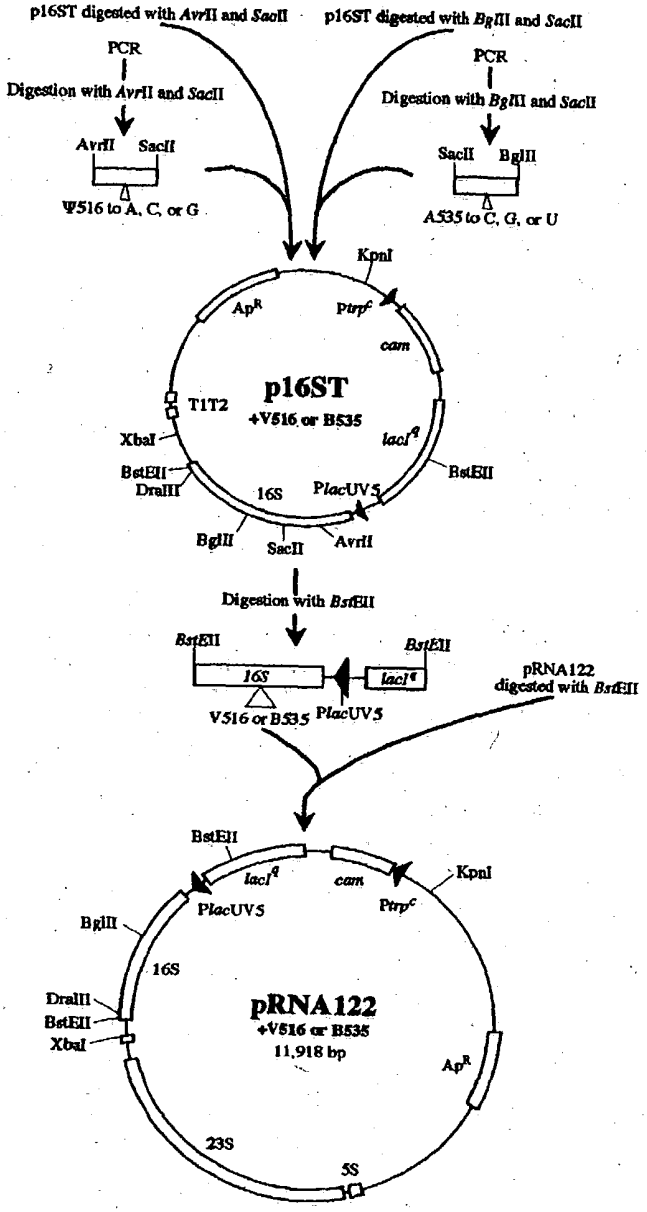

p16ST digested with AvrII and SacII
p16ST digested with BglII and SacII
PCR
PCR
Digestion with AvrII and SacII
Digestion with BglII and SacII
AvrII SacII
SacII BglII
Ψ516 to A, C, or G
A535 to C, G, or U
KpnI
Ap^R
Ptrp^c
cam
p16ST
+V516 or B535
T1T2
XbaI
lacI^q
BstEII
DraIII
16S
PlacUV5
BstEII
BglII
SacII
AvrII
Digestion with BstEII
BstEII
BstEII
16S
lacI^q
V516 or B535
PlacUV5
pRNA122
digested with BstEII
BstEII
lacI^q
cam
KpnI
PlacUV5
Ptrp^c
BglII
16S
DraIII
BstEII
XbaI
pRNA122
+V516 or B535
11,918 bp
Ap^R
23S
5S

Figure 7

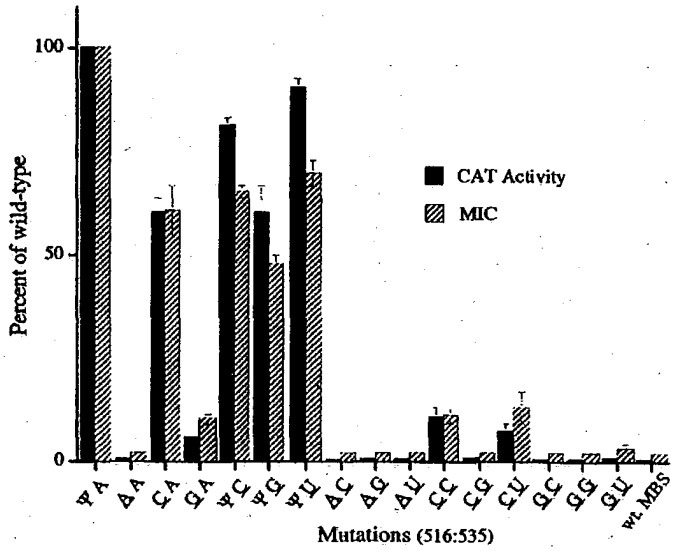

100
50
0
Percent of wild-type
CAT Activity
MIC
Mutations (516:535)
wt MBS

Figure 8

Oligo	Sequence (5′ to 3′)	Used for
OL2	ATAGGGGTTCCGCGCACATT	Primer *cam* from −268 to −249
IL2	CTCGAGCCTCCTGAAAGCGGCCG CAACTCAAAAAATACGCCCGGT AGT	Creating a *Not*I in the upstream of cam
OR2	AAATCGTCGTGGTATTCACT	Primer *cam* from 473 to 492
IR2	GCGGCCGCTTTCAGGAGGCTCGA GAAATGGAGAAAAAAATCACT	Creating a *Not*I in the upstream of cam
TRP′-T	GGCCGCTAGCCGGCGAGCTGTTG ACAATTAATCATCGAACTAGTT TAATGTGTGGAAGC	Promoter *trp*^{c}, top strand
TRP′-B	GGCCGCTTCCACACATTAAACTA GTTCGATGATTAATTGTCAACAG CTCGCCGGCTAGC	Promoter *trp*^{c}, bottom strand
SD*-B	TCGAGCACACTGAAAGC	Mutated RBS for pCAM5; top strand
SD*-T	GGCCGCTTTCAGTGTGC	Mutated RBS for pCAM5; bottom strand
lacU	GGTCATAGGCGGCCGCTGTGTGA AATTGTTATCCGCTCACAATTCC ACACATTATACGAGCCGGAAGC	Creating a *Not*I and P*lac*UV5 mutation in the 3′ end of *lacI*
lacL	TTGGATCCGACACCATCGAATGG TGCAAAACCTT	Creating a *Bam*HI and *lacI*^{q} mutation in the 5′ end of *lacI*
OL4	GAAGGGATCCGGCGAAGATGTTT CTCTGG	Primer 16S rRNA from −707 to −689; creating a *Bam*HI in the 5′ end of 16S rRNA
IL4	GCGGCCGCTTAAAATAATTTTCT GACC	Primer 16S rRNA from −351 to −333; deleting P1P2 and creating a *Not*I in the 5′ end of 16S rRNA
OR4	CCACAAGCTTCGCACCTGAGCGT CAGTCTTC	Primer 16S rRNA from 745 to 765; creating a *Hind*III in the middle of 16S rRNA
IR4	AAAATTATTTTAAGCGGCCGCTG AGAAAAAGCGAAGC	Primer 16S rRNA from −164 to −180; deleting P1P2 and creating a *Not*I in the 5′ end of 16S rRNA
ASD*-B	GGCGACTTTCACTCACAAAC	Primer $tRNA^{Glu}$ from +8 to +27
ASD*-T	GTCGAAGCTTGGTAACCGTAGGG GAACCTGCGGTTGGATCACACAC TTACCTTAAAGAAGCGTAC	Primer 16S from 1504 to +16, mutating the MBS region from $C^{1536}UC^{1538}$ to $A^{1536}CA^{1538}$
Cat-M-XhoI	TTAATGTGTGGAAGCGGCCGCTT TCATATCCCTNNNNAAATGGAG AAAAAAATC	Primer *cam* from −39 to +15; creating 4 nucleotide random mutations
Cat-N-NcoI	CAGCACCTTGTCGCCTTGC	Primer *cam* from 688 to 706

Figure 9

App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

Plasmid	Description	Reference
pUC19	Cloning vector	(67)
pBR322	Cloning vector	(73)
pACYC177	Cloning vector	(72)
pKK3535	pBR322 derivative containing intact *rrn*B operon	(31)
pSPORT1	pUC19 derivative containing *lacI*	(57)
pJLS1021	pBR322 derivative containing *cam*	(58)
pSTL102	pKK3535 containing U1192 in 16S rRNA and G2058 in 23S rRNA	(34)
pCAM1	pJLS1021 plus a *Not*I site in the upstream of *cam*	This study
pCAM2	pCAM1 plus P_{trp}^{c} between *Not*I sites in the upstream of *cam*	This study
pCAM4	pBR322 plus the NaeI fragment of pCAM2 containing *cam* under P_{trp}^{c}	This study
pCAM5	pCAM4 containing RBS (5′-GUGUG) of Hui et al. (1) in *cam*	This study
pCAM9	pCAM5 containing selected RBS (5′-AUCCC) in *cam*	This study
pCAM10	pCAM9 containing selected upstream sequence of *cam*	This study
pRNA3	pUC19 plus *lacI*^{q} and 5′ end of 16S rRNA under P*lac*UV5	This study
pRNA4	pACYC177 plus *lacI*^{q} and *rrn*B with wild-type MBS under P*lac* UV5	This study
pRNA5	pRNA4 containing MBS (5′-CACAC) of Hui et al. (1) in 16S rRNA	This study
pRNA6	pCAM5 plus the *Bam*HI fragment containing *lacI*^{q} and *rrn*B from pRNA5	This study
pRNA8	pCAM5 plus the *Bam*HI fragment containing *lacI*^{q} and *rrn*B from pRNA4	This study
pRNA9	pCAM4 plus the *Bam*HI fragment containing *lacI*^{q} and *rrn*B from pRNA4	This study
pRNA100	pRNA8 containing selected MBS (5′-GGGAU) and RBS (5′-AUCCC)	This study
pRNA101	pRNA100 containing U1192 in 16S rRNA	This study
pRNA104	pRNA101 containing U2058 in 23S rRNA	This study
p16ST	pUC19 derivative containing *cam*, *lacI*^{q} and 16S rRNA from pRNA100	This study
pRNA122	pRNA100 containing selected upstream sequence of *cam* from pCAM10	This study
pRNA170	pRNA122 containing U1192 in 16S rRNA and U2058 in 23S rRNA	This study

Figure 10

App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

	MIC with induction								
MIC with no induction	50	100	200	400	500	600	700	800	1000
50			4	1					
100		1	1	51	16	6	1		
200			3	121	45	10	2		
400				72	72	22	1	1	
600				4	11	20	3	60	3
700							1	3	
800									1
1000									

FIGURE 11

App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

Clone	RNA sequences	ΔG°_{37}	MIC		CAT		Induction
	5′ C A R1 R2 R3 R4 R5 C U C G 3′ CAT mRNA		μg of Cm/mL		CPM		
Random	3′ A U U M5 M4 M3 M2 M1 A C U 5′ 16S rRNA	kcal/mol	−I	+I	−I	+I	−I/+I
pRNA9	5′ C A G G A G G C U C G 3′ 3′ A U U C C U C C A C U 5′	−9.8	500	500	2803 ± 68	2700 ± 196	1.0
pRNA6	5′ C A G U G U G C U C G 3′ 3′ A U U C A C A C A C U 5′	−7.8	100	200	4033 ± 1040	12437 ± 2491	3.1
VII30	5′ C A U A U C C C U C G 3′ 3′ A U U U A G G G A C U 5′	−8.4	100	500	6293 ± 706	72206 ± 706	11.5
VII43	5′ C A A A C A C C U C G 3′ 3′ A U U G G A G A A C U 5′	−8.1	125	500	5603 ± 1011	47667 ± 891	8.5
VII64, VII65	5′ C A U A C C U C U C G 3′ 3′ A U U G G A G U A C U 5′	−7.3	100	500	6200 ± 953	37311 ± 3978	6.0
VIII29	5′ C A U A A U C C U C G 3′ 3′ A U U A G G A G A C U 5′	−10.9	125	600	7869 ± 416	91153 ± 4003	11.6
VIII46	5′ C A A A U A C C U C G 3′ 3′ A U U G G A G U A C U 5′	−7.7	100	500	6431 ± 816	46840 ± 796	7.3
VIII77	5′ C A C A U A C C U C G 3′ 3′ A U U G G A G U A C U 5′	−7.7	150	600	6794 ± 650	44358 ± 4841	6.5
VIII93	5′ C A C C G A C C U C G 3′ 3′ A U U G G A G A A C U 5′	−8.5	100	500	5643 ± 897	24888 ± 2388	4.4
IX24	5′ C A U A U C C C U C G 3′ 3′ A U U A G G G U A C U 5′	−7.3	100	650	7524 ± 263	91809 ± 4542	12.7
IX32	5′ C A A C U A C C U C G 3′ 3′ A U U G G A G U A C U	−7.7	100	500	5783 ± 971	32164 ± 5862	5.6
IX67	5′ C A U A U A C C U C G 3′ 3′ A U U G G A G A A C U 5′	−8.0	125	600	6063 ± 787	24581 ± 3009	4.1

FIGURE 12

App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

Clone	RNA sequences	MIC (μg/mL)	
	5′ C A U A U C C C U N N N N A A A U G 3′ CAT mRNA		
Mutated positions	3′ A U U A G G G U A C U A G G 5′ 16S rRNA	−I	+I
pRNA100	5′ C A U A U C C C U C G A G A A A U G 3′ 3′ A U U A G G G U A C U A G G 5′	100	650
pRNA100 + wt MBS	5′ C A U A U C C C U C G A G A A A U G 3′ 3′ A U U C C U C C A C U A G G 5′	50	50
pRNA122	5′ C A U A U C C C U C C G C A A A U G 3′ 3′ A U U A G G G U A C U A G G 5′	50	600
pRNA122 + wt MBS	5′ C A U A U C C C U C C G C A A A U G 3′ 3′ A U U C C U C C A C U A G G 5′	10	10
pRNA125	5′ C A U A U C C C U C C U G A A A U G 3′ 3′ A U U A G G G U A C U A G G 5′	80	600
pRNA127	5′ C A U A U C C C U C C C A A A A U G 3′ 3′ A U U A G G G U A C U A G G 5′	50	600
pRNA128	5′ C A U A U C C C U C C A C A A A U G 3′ 3′ A U U A G G G U A C U A G G 5′	50	600

FIGURE 13

App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

Residue at 516	Percent plasmid-derived 30S in			% CAT
	30S peak	70S peak	Crude ribosomes	
Ψ	46.5 ± 3.6	53.0 ± 4.5	47.8 ± 2.8	100
A	54.2 ± 5.4	10.6 ± 1.4	37.5 ± 3.9	0
C	51.8 ± 0.2	27.1 ± 2.9	42.9 ± 5.8	59.4
G	67.5 ± 6	8.8 ± 0.9	44.1 ± 5.2	6.3

FIGURE 14

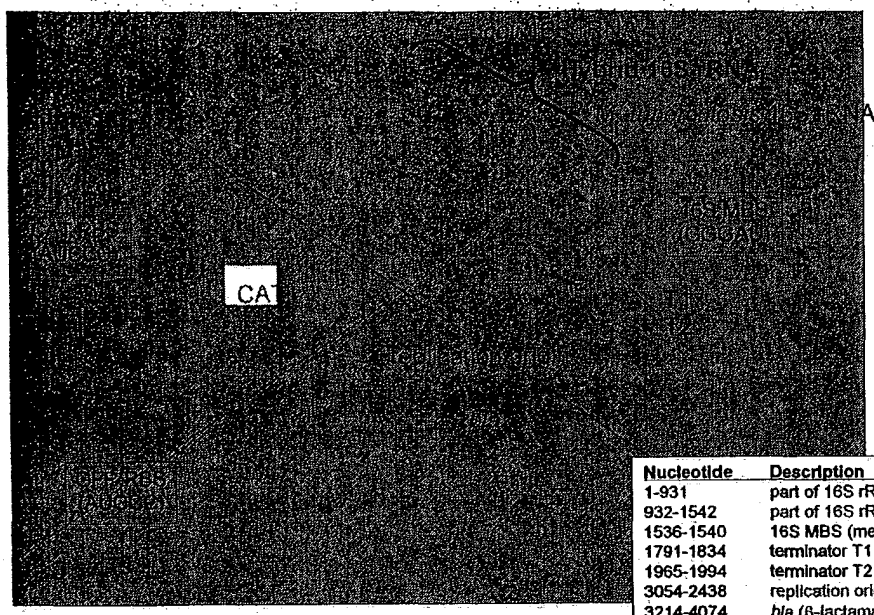
App No.: Not Yet Assigned Docket No.: WSV-2597
Inventor: Phillip R. Cunningham
Title: METHODS AND COMPOSITIONS FOR THE IDENTIFICATION OF ANTIBIOTICS THAT ARE NOT SUSCEPTIBLE TO ANTIBIOTIC RESISTANCE

Clone	Alignment of CAT mRNA and 16S rRNA	MIC (μg of Cm/mL)		ΔG°_{37} (kcal/mol)
Random	5′ C A R1 R2 R3 R4 R5 C U C G 3′ CAT mRNA 3′ A U U N5 N4 N3 N2 N1 A C U 5′ 16S rRNA	no IPTG	1 mM IPTG	
wild-type	5′ C A G G A G G C U C G 3′ 3′ A U U C C U C C A C U 5′	500	500	−9.8
1	5′ C A A U C C C U C G 3′ 3′ A U U A G G G A A C U 5′	100	400	−8.3
2	5′ C A U A C C U C U C G 3′ 3′ A U U G G G U A A C U 5′	50	100	−4
3	5′ C A C A G U C C U C G 3′ 3′ A U U A G C A G A C U 5′	50	100	−1.9
4	5′ C A A A C C A C U C G 3′ 3′ A U U U A G U G A C U 5′	50	100	−4.1
5	5′ C A U A G C C C U C G 3′ 3′ A U U G G G U U A C U 5′	50	100	−7.6
6	5′ C A U C U U C C U C G 3′ 3′ A U U G G A G G A C U 5′	50	100	−7.4
7	5′ C A A U U A U C U C G 3′ 3′ A U U U U A A G A C U 5′	50	100	−3.1
8	5′ C A C A G A A C U C G 3′ 3′ A U U G A C U A A C U 5′	100	200	−3.6
9	5′ C A A A G U U C U C G 3′ 3′ A U U G A G U A A C U 5′	100	200	−0.6
10	5′ C A A U U C A C U C G 3′ 3′ A U U A A G U G A C U 5′	100	400	−7.7
11	5′ C A A C U C A C U C G 3′ 3′ A U U G U G A G A C U 5′	100	200	−7.1
12	5′ C A A C C C A C U C G 3′ 3′ A U U A G G G U A C U 5′	50	100	−6
13	5′ C A U C G U U C U C G 3′ 3′ A U U G A G A A A C U 5′	50	200	−2.2
14	5′ C A C A C C A C U C G 3′ 3′ A U U U U G G U A C U 5′	50	100	−4.7
15	5′ C A C C C A C C U C G 3′ 3′ A U U G G G A A A C U 5′	50	200	−7
16	5′ C A U C C C A C U C G 3′ 3′ A U U G G G G A A C U 5′	50	100	−7.3
17	5′ C A A A C U C C U C G 3′ 3′ A U U A U C A U A C U 5′	50	100	0.8
18	5′ C A U A C A U C U C G 3′ 3′ A U U U G A G A A C U 5′	50	100	−2.1
19	5′ C A A C U C U C U C G 3′ 3′ A U U A G A G G A A U 5′	50	200	−5.6
20	5′ C A A A A U A U C U C G 3′ 3′ A U U U A G A G A C U 5′	200	500	−6.2
21	5′ C A U A C C U C U C G 3′ 3′ A U U G G A G U A C U 5′	200	500	−7.3
22	5′ C A U A G U A C U C G 3′ 3′ A U U U A G G U A C U 5′	100	200	0.3
23	5′ C A A U C C A C U C G 3′ 3′ A U U A G G U G A C U 5′	200	400	−10.6
24	5′ C A C A A A U C U C G 3′ 3′ A U U U U C G G A C U 5′	100	200	−0.2

FIGURE 15

Clone	Alignment of CAT mRNA and 16S rRNA	MIC (μg of Cm/mL)		ΔG°_{37}
Random	5′ C A R1 R2 R3 R4 R5 C U C G 3′ CAT mRNA 3′ A U U M5 M4 M3 M2 M1 A C U 5′ 16S rRNA	no IPTG	1 mM IPTG	(kcal/mol)
25	5′ C A U A C A C U C G 3′ 3′ A U U A U G U A C U 5′	200	400	−6.8
26	5′ C A A C U A A C U C G 3′ 3′ A U U G U G A U A C U 5′	100	200	−3.4
27	5′ C A A A U A U C U C G 3′ 3′ A U U A U G G A A C U 5′	100	400	−5.3
28	5′ C A A A U A U C U C G 3′ 3′ A U U A G A G G A C U 5′	200	400	−1.6
29	5′ C A C U C C U C U C G 3′ 3′ A U U A G G A G A C U 5′	50	100	−9.1
30	5′ C A U A U U C C U C G 3′ 3′ A U U A A G G U A C U 5′	100	400	−5.3
31	5′ C A A C C U A C U C G 3′ 3′ A U U A G A G G A C U 5′	50	200	−3.1
32	5′ C A A U C C A C U C G 3′ 3′ A U U A G A G G A C U 5′	100	400	−4.5
33	5′ C A A C C C C C U C G 3′ 3′ A U U G G G A G A C U 5′	100	400	−7.2
34	5′ C A A A C A U C U C G 3′ 3′ A U U G U A G A A C U 5′	200	400	−8
35	5′ C A U C C C A C U C G 3′ 3′ A U U A U G G G A C U 5′	50	200	−5
36	5′ C A C U G A U C U C G 3′ 3′ A U U A G G A G A C U 5′	200	500	−3.9
37	5′ C A U A U C C C U C G 3′ 3′ A U U U A G G G A C U 5′	100	500	−8.4
38	5′ C A A A C A C C U C G 3′ 3′ A U U G G A G A A C U 5′	150	500	−8.1
39	5′ C A A C G A A C U C G 3′ 3′ A U U G U G A G A C U 5′	100	400	−5.7
40	5′ C A U C U A U C U C G 3′ 3′ A U U A G A G G A C U 5′	100	400	−6.2
41	5′ C A U A C C U C U C G 3′ 3′ A U U G G A G U A C U 5′	100	500	−7.3
42	5′ C A U A U A A C U C G 3′ 3′ A U U A G A G A A C U 5′	200	500	−3.6
43	5′ C A A A U A C C U C G 3′ 3′ A U U G G A G U A C U 5′	100	500	−7.7
44	5′ C A C A U A C C U C G 3′ 3′ A U U G G A G U A C U 5′	150	600	−7.7
45	5′ C A C C G A C C U C G 3′ 3′ A U U G G A G A A C U 5′	100	500	−8.5
46	5′ C A U A U C C C U C G 3′ 3′ A U U G G G G U A C U 5′	100	700	−7.3
47	5′ C A A C U A C C U C G 3′ 3′ A U U G G A G U A C U 5′	100	500	−7.7
48	5′ C A U A U A C C U C G 3′ 3′ A U U G G A G A A C U 5′	200	600	−8

FIGURE 16



Nucleotide	Description
1-931	part of 16S rRNA from *Escherichia coli* rrnB operon
932-1542	part of 16S rRNA from *Mycobacterium tuberculosis* rrn operon
1536-1540	16S MBS (message binding sequence) GGGAU
1791-1834	terminator T1 of *Escherichia coli* rrnB operon
1965-1994	terminator T2 of *Escherichia coli* rrnB operon
3054-2438	replication origin
3214-4074	*bla* (β-lactamase; ampicillin resistance)
5726-4992	GFP (Green Fluorescent Protein)
5738-5734	GFP RBS (ribosome binding sequence) AUCCC
5795-5755	*trpc* promoter
6270-6310	*trpc* promoter
6327-6331	CAT RBS (ribosome binding sequence) AUCCC
6339-6998	*cam* (chloramphenicol acetyltransferase; CAT)
7307-7384	*lacI*^{q} promoter
7385-8467	*lacI*^{q} (lac repressor)
8510-8551	*lacUV5* promoter

FIGURE 17

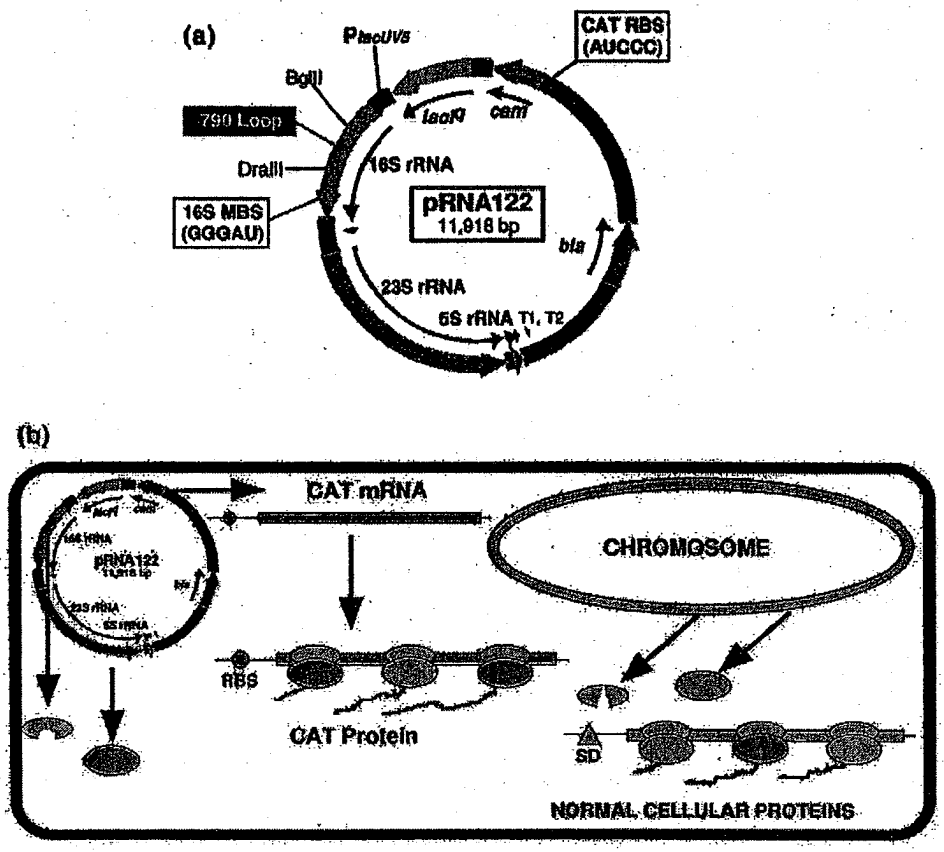

(a)
PlacUV5
CAT RBS
(AUCCC)
BglII
790 Loop
lacIq
cam
DraIII
16S rRNA
16S MBS
(GGGAU)
pRNA122
11,918 bp
bla
23S rRNA
5S rRNA T1, T2
(b)
CAT mRNA
CHROMOSOME
RBS
CAT Protein
SD
NORMAL CELLULAR PROTEINS

FIGURE 18

MIC[a] (μg/ml)	Nucleotide sequence[b] 787	788	789	790	791	792	793	794	795	Number of mutations[c]	Number of occurrences[d]
600[e]	A	U	U	A	G	A	U	A	C	0	WT
550	A	U	U	A	G	G	U	A	A	2	1
500	A	U	U	C	G	A	C	A	U	3	1
500	A	A	U	A	G	U	U	A	C	2	1
500	A	A	U	A	G	C	C	U	C	4	1
450	A	U	U	A	G	C	U	A	C	1	1
450	A	U	U	C	G	A	C	A	C	2	1
450	A	C	U	A	G	C	A	C	A	5	1
450	A	C	U	A	G	C	U	U	C	3	1
450	A	A	U	A	G	A	U	A	C	1	2
450	A	A	U	A	G	U	A	U	C	4	1
450	A	A	U	C	G	C	U	U	C	5	1
450	G	A	U	A	G	C	U	A	U	4	1
400	A	U	U	A	G	G	C	A	C	2	1
400	A	A	U	A	G	G	C	U	C	3	2
400	A	A	U	A	G	U	C	A	A	4	2
400	A	A	U	C	G	U	C	U	C	5	1
350	A	U	U	A	G	A	A	A	A	2	1
350	A	U	U	A	G	C	G	A	C	2	2
350	A	U	U	A	G	G	A	G	C	3	3
350	A	U	U	A	G	G	C	A	A	3	2
350	A	G	U	A	G	C	C	U	C	4	2
350	A	G	U	A	G	C	U	U	C	3	2
350	A	G	U	A	G	G	A	U	C	4	2
350	A	G	U	A	G	G	U	U	C	3	1
350	A	G	U	A	G	U	C	U	C	4	1
350	A	C	U	A	G	A	U	A	C	2	1
350	A	C	U	A	G	C	A	C	C	3	1
350	A	C	U	A	G	C	A	U	C	4	3
350	A	C	U	A	G	C	A	U	A	3	1
350	A	C	U	A	G	G	U	A	C	4	2
350	A	C	U	A	G	U	A	A	C	3	1
350	A	C	U	A	G	U	A	U	C	4	1
350	A	C	U	A	G	U	U	U	C	3	1
350	A	A	U	A	G	A	U	U	C	2	1
350	A	A	U	A	G	C	A	G	C	4	2
350	A	A	U	A	G	C	C	A	A	4	1
350	A	A	U	A	G	C	C	A	C	3	3
350	A	A	U	A	G	C	C	U	A	5	1
350	A	A	U	A	G	C	U	A	A	3	2
350	G	G	U	A	G	U	U	A	U	3	1
350	G	G	U	A	G	U	A	G	U	6	1
350	G	G	U	A	G	U	C	A	U	5	1
350	G	A	U	A	G	U	A	G	C	6	1
300	A	A	U	A	G	A	A	A	G	2	1
300	G	A	U	A	G	A	U	A	U	2	1
300	G	G	U	A	G	C	U	U	U	5	2
300	G	G	U	A	C	U	U	U	G	5	1
250	A	U	U	C	G	G	A	A	A	4	1
250	A	U	U	C	G	A	G	A	C	2	1
250	A	C	U	A	G	A	C	G	C	3	3
250	A	C	U	A	G	C	C	A	A	4	1
250	A	C	U	A	G	G	C	U	A	5	1
250	A	A	U	A	G	U	C	A	A	5	1
250	A	A	U	A	G	U	C	A	U	4	1
250	A	A	U	A	G	U	U	C	A	5	1
250	C	G	U	A	G	U	A	A	U	3	1
250	G	G	U	U	A	G	C	A	U	4	1
250	G	G	G	U	A	G	C	A	U	6	1
250	G	G	G	U	A	G	G	A	U	5	1
250	G	G	G	U	A	G	G	A	U	4	1
250	G	G	G	U	A	G	U	U	U	5	2
250	G	G	G	U	A	G	U	C	U	5	1
250	G	G	A	U	A	G	C	U	U	6	2
250	G	A	U	U	A	G	C	U	A	6	1
200	A	G	U	U	A	G	C	U	A	2	1
200	A	G	G	U	A	G	U	U	A	4	1
200	A	G	G	U	A	G	U	U	C	3	1
200	A	C	U	A	G	G	G	U	C	5	1
200	A	C	A	U	G	G	A	G	U	3	1
200	A	C	U	C	G	A	C	U	C	5	1
200	C	A	U	A	G	U	U	G	U	5	1
200	G	G	U	A	G	A	U	G	U	4	1
200	G	G	U	A	G	U	C	G	U	6	1
200	G	G	U	C	G	U	C	A	U	5	1
200	G	C	U	A	G	A	U	A	G	5	1
150	G	G	U	A	G	G	U	U	G	5	1

FIGURE 19

Nucleotide	787	788	789	790	791	792	793	794	795
A. *Nucleotide distribution of functional mutants*[a]									
A	54	24	0	69	0	15	18	35	16
C	2	16	0	8	0	24	26	5	34
G	22	21	0	1	78	16	4	9	7
U	0	17	78	0	0	23	30	29	21
Consensus	R	N	U	M	G	N	H	W	H
B. *Nucleotide distribution in all known bacteria*[b]									
A	573	0	0	578	1	578	0	577	0
C	3	0	0	0	1	0	0	1	578
G	1	0	0	0	576	0	3	0	0
U	1	578	578	0	0	0	575	0	0
Consensus	A	U	U	A	G	A	U	A	C
C. *Nucleotide distribution in all known organisms*[c]									
A	1657	2	1	1648	2	1655	5	1664	1
C	6	1	566	9	1	1	12	1	1665
G	4	0	0	3	1662	7	46	2	0
U	1	1664	1101	7	3	3	1605	1	0
Δ	0	1	0	1	0	2	0	0	2
Consensus	A	U	Y	A	G	A	U	A	C

FIGURE 20

Nucleotide[a] 787	795	Mean CAT activity[b]	% Mutant 30 S in 30 S peak[c]	70 S peak[c]	Thermodynamics[d] ΔG°_{37} (kcal/mol)	T_m (°C)
A	C	100	46.1 ± 0.8	41.7 ± 3.3	−3.25	61.8
A	A	83.8 ± 2.5	n.d.	n.d.	−2.90	61.3
C	C	80.5 ± 0.5	n.d.	n.d.	−2.84	60.7
C	U	74.1 ± 3.4	n.d.	n.d.	n.d.	n.d.
A	U	72.1 ± 4.5	74.3 ± 0.5	14.3 ± 1.0	−5.62	75.3
U	U	72.0 ± 2.4	n.d.	n.d.	n.d.	n.d.
G	U	70.5 ± 1.8	56.1 ± 1.4	14.2 ± 0.6	−4.96	68.1
U	C	65.5 ± 2.1	n.d.	n.d.	−2.88	60.6
C	A	53.4 ± 1.0	n.d.	n.d.	n.d.	n.d.
G	G	52.9 ± 0.4	n.d.	n.d.	−3.70	64.9
G	A	46.0 ± 1.4	n.d.	n.d.	n.d.	n.d.
A	G	37.5 ± 0.5	n.d.	n.d.	−3.19	63.5
U	A	36.7 ± 0.4	70.8 ± 7.4	10.1 ± 0.4	−5.82	74.3
U	G	13.5 ± 3.3	57.7 ± 12.1	5.5 ± 3.4	−5.15	69.4
G	C	5.5 ± 1.8	58.3 ± 8.2	5.1 ± 1.3	−7.61	83.4
C	G	1.2 ± 0.1	n.d.	n.d.	n.d.	n.d.

FIGURE 21

GACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGG
TTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAA
TTATGCAGTGCTGCCATAACCATGAGTGATAACACTGCGGCCAACTTACTTCTGAC
AACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCAT
GTAACTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAAACGACG
AGCGTGACACCACGATGCCTGCAGCAATGGCAACAACGTTGCGCAAACTATTAAC
TGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCG
GATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTG
CTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGG
GCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCA
ACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCA
TTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACTTCAT
TTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAAATC
CCTTAACGTGAGTTTTCGTTCCACTGAGCGTCAGACCCCTTAATAAGATGATCTTC
TTGAGATCGTTTTGGTCTGCGCGTAATCTCTTGCTCTGAAAACGAAAAAACCGCCT
TGCAGGGCGGTTTTTCGAAGGTTCTCTGAGCTACCAACTCTTTGAACCGAGGTAA
CTGGCTTGGAGGAGCGCAGTCACCAAAACTTGTCCTTTCAGTTTAGCCTTAACCG
GCGCATGACTTCAAGACTAACTCCTCTAAATCAATTACCAGTGGCTGCTGCCAGTG
GTGCTTTTGCATGTCTTTCCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGC
GCAGCGGTCGGACTGAACGGGGGGTTCGTGCATACAGTCCAGCTTGGAGCGAAC
TGCCTACCCGGAACTGAGTGTCAGGCGTGGAATGAGACAAACGCGGCCATAACA
GCGGAATGACACCGGTAAACCGAAAGGCAGGAACAGGAGAGCGCACGAGGGAGC
CGCCAGGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCACTG
ATTTGAGCGTCAGATTTCGTGATGCTTGTCAGGGGGGCGGAGCCTATGGAAAAAC
GGCTTTGCCGCGGCCCTCTCACTTCCCTGTTAAGTATCTTCCTGGCATCTTCCAGG
AAATCTCCGCCCCGTTCGTAAGCCATTTCCGCTCGCCGCAGTCGAACGACCGAGC
GTAGCGAGTCAGTGAGCGAGGAAGCGGAATATATCCTGTATCACATATTCTGCTG
ACGCACCGGTGCAGCCTTTTTTCTCCTGCCACATGAAGCACTTCACTGACACCCTC
ATCAGTGCCAACATAGTAAGCCAGTATACACTCCGCTAGCATCGTCCATTCCGACA
GCATCGCCAGTCACTATGGCGTGCTGCTAGCGCTATATGCGTTGATGCAATTTCTA
TGCGCACCCGTTCTCGGAGCACTGTCCGACCGCTTTGGCCGCCGCCCAGTCCTG
CTCGCTTCGCTACTTGGAGCCACTATCGACTACGCGATCATGGCGACCACACCCG
TCCTGTGGATCCTCTACGCCGGACGCATCGTGGCCGGCCACGATGCGTCCGGCG
TAGAGGATCTATTTAACGACCCTGCCCTGAACCGACGACCGGGTCGAATTTGCTTT
CGAATTTCTGCCATTCATCCGCTTATTATCACTTATTCAGGCGTAGCACCAGGCGT
TTAAGGGCACCAATAACTGCCTTAAAAAAATTACGCCCCGCCCTGCCACTCATCGC
AGTACTGTTGTAATTCATTAAGCATTCTGCCGACATGGAAGCCATCACAGACGGCA
TGATGAACCTGAATCGCCAGCGGCATCAGCACCTTGTCGCCTTGCGTATAATATTT
GCCCATGGTGAAAACGGGGGCGAAGAAGTTGTCCATATTGGCCACGTTTAAATCA
AAACTGGTGAAACTCACCCAGGGATTGGCTGAGACGAAAAACATATTCTCAATAAA
CCCTTTAGGGAAATAGGCCAGGTTTTCACCGTAACACGCCACATCTTGCGAATATA
TGTGTAGAAACTGCCGGAAATCGTCGTGGTATTCACTCCAGAGCGATGAAAACGT
TTCAGTTTGCTCATGGAAAACGGTGTAACAAGGGTGAACACTATCCCATATCACCA
GCTCACCGTCTTTCATTGCCATACGGAATTCCGGATGAGCATTCATCAGGCGGGC
AAGAATGTGAATAAAGGCCGGATAAAACTTGTGCTTATTTTTCTTTACGGTCTTTAA
AAAGGCCGTAATATCCAGCTGAACGGTCTGGTTATAGGTACATTGAGCAACTGACT

FIGURE 22

GAAATGCCTCAAAATGTTCTTTACGATGCCATTGGGATATATCAACGGTGGTATAT
CCAGTGATTTTTTTCTCCATTTCTCGAGCACACTGAAAGCGGCCGCTTCCACACAT
TAAACTAGTTCGATGATTAATTGTCAACAGCTCGCCGCTATATGCGTTGATGCAATT
TCTATGCGCACCCGTTCTCGGAGCACTGTCCGACCGCTTTGGCCGCCGCCCAGTC
CTGCTCGCTTCGCTACTTGGAGCCACTATCGACTACGCGATCATGGCGACCACAC
CCGTCCTGTGGATCCCAGACGAGTTAAGTCACCATACGTTAGTACAGGTTGCCAC
TCTTTTGGCAGACGCAGACCTACGGCTACAATAGCGAAGCGGTCCTGGTATTCAT
GTTTAAAAATACTGTCGCGATAGCCAAAACGGCACTCTTTGGCAGTTAAGCGCACT
TGCTTGCCTGTCGCCAGTTCAACAGAATCAACATAAGCGCAAACTCGCTGTAATTC
TACGCCATAAGCACCAATATTCTGGATAGGTGATGAGCCGACACAACCAGGAATTA
ATGCCAGATTTTCCAGACCAGGCATACCTTCCTGCAAAGTGTATTTTACCAGACGA
TGCCAGTTTTCTCCGGCTCCTACATGTAAATACCACGCATCAGGTTCATCATGAAT
TTCGATACCTTTGATCCGGTTGATGATCACCGTGCCGCGATAGTCCTCCAGAAAAA
GTACATTACTTCCTTCACCCAGAATAAGAACGGGTTGTCCTTCTGCGGTTGCATAC
TGCCAGGCATTGAGTAATTGTTGTTCGTCTTCGGCACATACAATGTGCTGAGCATT
ATGATCAATGCCAAATGTGTTCCAGGGTTTTAAGGAGTGGTTCATAGCTGCTTTCC
TGATGCAAAAACGAGGCTAGTTTACCGTATCTGTGGGGGGATGGCTTGTAGATAT
GACGACAGGAAGAGTTTGTAGAAACGCAAAAAGGCCATCCGTCAGGATGGCCTTC
TGCTTAATTTGATGCCTGGCAGTTTATGGCGGGCGTCCTGCCCGCCACCCTCCGG
GCCGTTGCTTCGCAACGTTCAAATCCGCTCCCGGCGGATTTGTCCTACTCAGGAG
AGCGTTCACCGACAAACAACAGATAAAACGAAAGGCCCAGTCTTTCGACTGAGCC
TTTCGTTTTATTTGATGCCTGGCAGTTCCCTACTCTCGCATGGGGAGACCCCACAC
TACCATCGGCGCTACGGCGTTTCACTTCTGAGTTCGGCATGGGGTCAGGTGGGAC
CACCGCGCTACTGCCGCCAGGCAAATTCTGTTTTATCAGACCGCTTCTGCGTTCTG
ATTTAATCTGTATCAGGCTGAAAATCTTCTCTCATCCGCCAAAACAGCTTCGGCGT
TGTAAGGTTAAGCCTCACGGTTCATTAGTACCGGTTAGCTCAACGCATCGCTGCG
CTTACACACCCGGCCTATCAACGTCGTCGTCTTCAACGTTCCTTCAGGACCCTTAA
AGGGTCAGGGAGAACTCATCTCGGGGCAAGTTTCGTGCTTAGATGCTTTCAGCAC
TTATCTCTTCCGCATTTAGCTACCGGGCAGTGCCATTGGCATGACAACCCGAACAC
CAGTGATGCGTCCACTCCGGTCCTCTCGTACTAGGAGCAGCCCCCCTCAGTTCTC
CAGCGCCCACGGCAGATAGGGACCGAACTGTCTCACGACGTTCTAAACCCAGCTC
GCGTACCACTTTAAATGGCGAACAGCCATACCCTTGGGACCTACTTCAGCCCCAG
GATGTGATGAGCCGACATCGAGGTGCCAAACACCGCCGTCGATATGAACTCTTGG
GCGGTATCAGCCTGTTATCCCCGGAGTACCTTTTATCCGTTGAGCGATGGCCCTT
CCATTCAGAACCACCGGATCACTATGACCTGCTTTCGCACCTGCTCGCGCCGTCA
CGCTCGCAGTCAAGCTGGCTTATGCCATTGCACTAACCTCCTGATGTCCGACCAG
GATTAGCCAACCTTCGTGCTCCTCCGTTACTCTTTAGGAGGAGACCGCCCCAGTC
AAACTACCCACCAGACACTGTCCGCAACCCGGATTACGGGTCAACGTTAGAACAT
CAAACATTAAAGGGTGGTATTTCAAGGTCGGCTCCATGCAGACTGGCGTCCACAC
TTCAAAGCCTCCCACCTATCCTACACATCAAGGCTCAATGTTCAGTGTCAAGCTAT
AGTAAAGGTTCACGGGGTCTTTCCGTCTTGCCGCGGGTACACTGCATCTTCACAG
CGAGTTCAATTTCACTGAGTCTCGGGTGGAGACAGCCTGGCCATCATTACGCCAT
TCGTGCAGGTCGGAACTTACCCGACAAGGAATTTCGCTACCTTAGGACCGTTATA
GTTACGGCCGCCGTTTACCGGGGCTTCGATCAAGAGCTTCGCTTGCGCTAACCCC
ATCAATTAACCTTCCGGCACCGGGCAGGCGTCACACCGTATACGTCCACTTTCGT
GTTTGCACAGTGCTGTGTTTTTAATAAACAGTTGCAGCCAGCTGGTATCTTCGACT

FIGURE 22 Cont.

GATTTCAGCTCCATCCGCGAGGGACCTCACCTACATATCAGCGTGCCTTCTCCCG
AAGTTACGGCACCATTTTGCCTAGTTCCTTCACCCGAGTTCTCTCAAGCGCCTTGG
TATTCTCTACCTGACCACCTGTGTCGGTTTGGGGTACGATTTGATGTTACCTGATG
CTTAGAGGCTTTTCCTGGAAGCAGGGCATTTGTTGCTTCAGCACCGTAGTGCCTC
GTCATCACGCCTCAGCCTTGATTTTCCGGATTTGCCTGGAAAACCAGCCTACACGC
TTAAACCGGGACAACCGTCGCCCGGCCAACATAGCCTTCTCCGTCCCCCCTTCGC
AGTAACACCAAGTACAGGAATATTAACCTGTTTCCCATCGACTACGCCTTTCGGCC
TCGCCTTAGGGGTCGACTCACCCTGCCCCGATTAACGTTGGACAGGAACCCTTGG
TCTTCCGGCGAGCGGGCTTTTCACCCGCTTTATCGTTACTTATGTCAGCATTCGCA
CTTCTGATACCTCCAGCATGCCTCACAGCACACCTTCGCAGGCTTACAGAACGCT
CCCCTACCCAACAACGCATAAGCGTCGCTGCCGCAGCTTCGGTGCATGGTTTAGC
CCCGTTACATCTTCCGCGCAGGCCGACTCGACCAGTGAGCTATTACGCTTTCTTTA
AATGATGGCTGCTTCTAAGCCAACATCCTGGCTGTCTGGGCCTTCCCACATCGTTT
CCCACTTAACCATGACTTTGGGACCTTAGCTGGCGGTCTGGGTTGTTTCCCTCTTC
ACGACGGACGTTAGCACCCGCCGTGTGTCTCCCGTGATAACATTCTCCGGTATTC
GCAGTTTGCATCGGGTTGGTAAGTCGGGATGACCCCCTTGCCGAAACAGTGCTCT
ACCCCCGGAGATGAATTCACGAGGCGCTACCTAAATAGCTTTCGGGGAGAACCAG
CTATCTCCCGGTTTGATTGGCCTTTCACCCCCAGCCACAAGTCATCCGCTAATTTT
TCAACATTAGTCGGTTCGGTCCTCCAGTTAGTGTTACCCAACCTTCAACCTGCCCA
TGGCTAGATCACCGGGTTTCGGGTCTATACCCTGCAACTTAACGCCCAGTTAAGA
CTCGGTTTCCCTTCGGCTCCCCTATTCGGTTAACCTTGCTACAGAATATAAGTCGC
TGACCCATTATACAAAAGGTACGCAGTCACACGCCTAAGCGTGCTCCCACTGCTT
GTACGTACACGGTTTCAGGTTCTTTTTCACTCCCCTCGCCGGGGTTCTTTTCGCCT
TTCCCTCACGGTACTGGTTCACTATCGGTCAGTCAGGAGTATTTAGCCTTGGAGGA
TGGTCCCCCCATATTCAGACAGGATACCACGTGTCCCGCCCTACTCATCGAGCTC
ACAGCATGTGCATTTTTGTGTACGGGGCTGTCACCCTGTATCGCGCGCCTTTCCA
GACGCTTCCACTAACACACACACTGATTCAGGCTCTGGGCTGCTCCCCGTTCGCT
CGCCGCTACTGGGGGAATCTCGGTTGATTTCTTTTCCTCGGGGTACTTAGATGTTT
CAGTTCCCCCGGTTCGCCTCATTAACCTATGGATTCAGTTAATGATAGTGTGTCGA
AACACACTGGGTTTCCCCATTCGGAAATCGCCGGTTATAACGGTTCATATCACCTT
ACCGACGCTTATCGCAGATTAGCACGTCCTTCATCGCCTCTGACTGCCAGGGCAT
CCACCGTGTACGCTTAGTCGCTTAACCTCACAACCCGAAGATGTTTCTTTCGATTC
ATCATCGTGTTGCGAAAATTTGAGAGACTCACGAACAACTCTCGTTGTTCAGTGTT
TCAATTTTCAGCTTGATCCAGATTTTTAAAGAGCAAAAATCTCAAACATCACCCGAA
GATGAGTTTTGAGATATTAAGGTCGGCGACTTTCACTCACAAACCAGCAAGTGGC
GTCCCCTAGGGGATTCGAACCCCTGTTACCGCCGTGAAAGGGCGGTGTCCTGGG
CCTCTAGACGAAGGGGACACGAAAATTGCTTATCACGCGTTGCGTGATATTTTCGT
GTAGGGTGAGCTTTCATTAATAGAAAGCGAACGGCCTTATTCTCTTCAGCCTCACT
CCCAACGCGTAAACGCCTTGCTTTTCACTTTCTATCAGACAATCTGTGTGAGCACT
ACAAAGTACGCTTCTTTAAGGTAAGTGTGTGATCCAACCGCAGGTTCCCCTACGGT
TACCTTGTTACGACTTCACCCCAGTCATGAATCACAAAGTGGTAAGCGCCCTCCCG
AAGGTTAAGCTACCTACTTCTTTTGCAACCCACTCCCATGGTGTGACGGGCGGTG
TGTACAAGGCCCGGGAACGTATTCACCGTGGCATTCTGATCCACGATTACTAGCG
ATTCCGACTTCATGGAGTCGAGTTGCAGACTCCAATCCGGACTACGACGCACTTTA
TGAGGTCCGCTTGCTCTCGCGAGGTCGCTTCTCTTTGTATGCGCCATTGTAGCAC
GTGTGTAGCCCTGGTCGTAAGGGCCATGATGACTTGACGTCATCCCCACCTTCCT

FIGURE 22 Cont.

CCAGTTTATCACTGGCAGTCTCCTTTGAGTTCCCGGCCGGACCGCTGGCAACAAA
GGATAAGGGTTGCGCTCGTTGCGGGACTTAACCCAACATTTCACAACACGAGCTG
ACGACAGCCATGCAGCACCTGTCTCACGGTTCCCGAAGGCACATTCTCATCTCTG
AAAACTTCCGTGGATGTCAAGACCAGGTAAGGTTCTTCGCGTTGCATCGAATTAAA
CCACATGCTCCACCGCTTGTGCGGGCCCCCGTCAATTCATTTGAGTTTTAACCTTG
CGGCCGTACTCCCCAGGCGGTCGACTTAACGCGTTAGCTCCGGAAGCCACGCCT
CAAGGGCACAACCTCCAAGTCGACATCGTTTACGGCGTGGACTACCAGGGTATCT
AATCCTGTTTGCTCCCCACGCTTTCGCACCTGAGCGTCAGTCTTCGTCCAGGGGG
CCGCCTTCGCCACCGGTATTCCTCCAGATCTCTACGCATTTCACCGCTACACCTG
GAATTCTACCCCCCTCTACGAGACTCAAGCTTGCCAGTATCAGATGCAGTTCCCAG
GTTGAGCCCGGGGATTTCACATCTGACTTAACAAACCGCCTGCGTGCGCTTTACG
CCCAGTAATTCCGATTAACGCTTGCACCCTCCGTATTACCGCGGCTGCTGGCACG
GAGTTAGCCGGTGCTTCTTCTGCGGGTAACGTCAATGAGCAAAGGTATTAACTTTA
CTCCCTTCCTCCCCGCTGAAAGTACTTTACAACCCGAAGGCCTTCTTCATACACGC
GGCATGGCTGCATCAGGCTTGCGCCCATTGTGCAATATTCCCCACTGCTGCCTCC
CGTAGGAGTCTGGACCGTGTCTCAGTTCCAGTGTGGCTGGTCATCCTCTCAGACC
AGCTAGGGATCGTCGCCTAGGTGAGCCGTTACCCCACCTACTAGCTAATCCCATC
TGGGCACATCCGATGGCAAGAGGCCCGAAGGTCCCCCTCTTTGGTCTTGCGACGT
TATGCGGTATTAGCTACCGTTTCCAGTAGTTATCCCCCTCCATCAGGCAGTTTCCC
AGACATTACTCACCCGTCCGCCACTCGTCAGCAAAGAAGCAAGCTTCTTCCTGTTA
CCGTTCGACTTGCATGTGTTAGGCCTGCCGCCAGCGTTCAATCTGAGCCATGATC
AAACTCTTCAATTTAAAAGTTTGACGCTCAAAGAATTAAACTTCGTAATGAATTACG
TGTTCACTCTTGAGACTTGGTATTCATTTTTCGTCTTGCGACGTTAAGAATCCGTAT
CTTCGAGTGCCCACACAGATTGTCTGATAAATTGTTAAAGAGCAGTGCCGCTTCGC
TTTTTCTCAGCGGCCGCTGTGTGAAATTGTTATCCGCTCACAATTCCACACATTATA
CGAGCCGGAAGCATAAAGTGTAAAGCCTGGGGTGCCTAATGAGTGAGCTAACTCA
CATTAATTGCGTTGCGCTCACTGCCCGCTTTCCAGTCGGGAAACCTGTCGTGCCA
GCTGCATTAATGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGCGTATTGGGCG
CCAGGGTGGTTTTTCTTTTCACCAGTGAGACGGGCAACAGCTGATTGCCCTTCAC
CGCCTGGCCCTGAGAGAGTTGCAGCAAGCGGTCCACGCTGGTTTGCCCCAGCAG
GCGAAAATCCTGTTTGATGGTGGTTGACGGCGGGATATAACATGAGCTGTCTTCG
GTATCGTCGTATCCCACTACCGAGATATCCGCACCAACGCGCAGCCCGGACTCGG
TAATGGCGCGCATTGCGCCCAGCGCCATCTGATCGTTGGCAACCAGCATCGCAGT
GGGAACGATGCCCTCATTCAGCATTTGCATGGTTTGTTGAAAACCGGACATGGCA
CTCCAGTCGCCTTCCCGTTCCGCTATCGGCTGAATTTGATTGCGAGTGAGATATTT
ATGCCAGCCAGCCAGACGCAGACGCGCCGAGACAGAACTTAATGGGCCCGCTAA
CAGCGCGATTTGCTGGTGACCCAATGCGACCAGATGCTCCACGCCCAGTCGCGTA
CCGTCTTCATGGGAGAAAATAATACTGTTGATGGGTGTCTGGTCAGAGACATCAAG
AAATAACGCCGGAACATTAGTGCAGGCAGCTTCCACAGCAATGGCATCCTGGTCA
TCCAGCGGATAGTTAATGATCAGCCCACTGACCCGTTGCGCGAGAAGATTGTGCA
CCGCCGCTTTACAGGCTTCGACGCCGCTTCGTTCTACCATCGACACCACCACGCT
GGCACCCAGTTGATCGGCGCGAGATTTAATCGCCGCGACAATTTGCGACGGCGC
GTGCAGGGCCAGACTGGAGGTGGCAACGCCAATCAGCAACGACTGTTTGCCCGC
CAGTTGTTGTGCCACGCGGTTGGGAATGTAATTCAGCTCCGCCATCGCCGCTTCC
ACTTTTTCCCGCGTTTTCGCAGAAACGTGGCTGGCCTGGTTCACCACGCGGGAAA
CGGTCTGATAAGAGACACCGGCATACTCTGCGACATCGTATAACGTTACTGGTTTC

FIGURE 22 Cont.

ACATTCACCACCCTGAATTGACTCTCTTCCGGGCGCTATCATGCCATACCGCGAAA
GGTTTTGCACCATTCGATGGTGTCGGATCCTAGAGCGCACGAATGAGGGCCGACA
GGAAGCAAAGCTGAAAGGAATCAAATTTGGCCGCAGGCGTACCGTGGACAGGAA
CGTCGTGCTGACGCTTCATCAGAAGGGCACTGGTGCAACGGAAATTGCTCATCAG
CTCAGTATTGCCCGCTCCACGGTTTATAAAATTCTTGAAGACGAAAGGGCCTCGTG
CATACGCCTATTTTTATAGGTTAATGTCATGATAATAATGGTTTCTTAGACGTCAGG
TGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATAC
ATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATT
GAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCCTTTTTTG
CGGCATTTTGCCTTCCTGTTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAAGAT
GCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCG
GTAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGATGAGCACTTTT
AAAGTTCTGCTATGTGGCGCGGTATTATCCCGTGTT

FIGURE 22 Cont.

GATCCTCTACGCCGGACGCATCGTGGCCGGCCACGATGCGTCCGGCGTAGAGGA
TCTATTTAACGACCCTGCCCTGAACCGACGACCGGGTCGAATTTGCTTTCGAATTT
CTGCCATTCATCCGCTTATTATCACTTATTCAGGCGTAGCACCAGGCGTTTAAGGG
CACCAATAACTGCCTTAAAAAAATTACGCCCCGCCCTGCCACTCATCGCAGTACTG
TTGTAATTCATTAAGCATTCTGCCGACATGGAAGCCATCACAGACGGCATGATGAA
CCTGAATCGCCAGCGGCATCAGCACCTTGTCGCCTTGCGTATAATATTTGCCCATG
GTGAAAACGGGGGCGAAGAAGTTGTCCATATTGGCCACGTTTAAATCAAAACTGG
TGAAACTCACCCAGGGATTGGCTGAGACGAAAAACATATTCTCAATAAACCCTTTA
GGGAAATAGGCCAGGTTTTCACCGTAACACGCCACATCTTGCGAATATATGTGTAG
AAACTGCCGGAAATCGTCGTGGTATTCACTCCAGAGCGATGAAAACGTTTCAGTTT
GCTCATGGAAAACGGTGTAACAAGGGTGAACACTATCCCATATCACCAGCTCACC
GTCTTTCATTGCCATACGGAATTCCGGATGAGCATTCATCAGGCGGGCAAGAATG
TGAATAAAGGCCGGATAAAACTTGTGCTTATTTTTCTTTACGGTCTTTAAAAAGGCC
GTAATATCCAGCTGAACGGTCTGGTTATAGGTACATTGAGCAACTGACTGAAATGC
CTCAAAATGTTCTTTACGATGCCATTGGGATATATCAACGGTGGTATATCCAGTGA
TTTTTTTCTCCATTTGCGGAGGGATATGAAAGCGGCCGCTTCCACACATTAAACTA
GTTCGATGATTAATTGTCAACAGCTCGCCGGCGGCACCTCGCTAACGGATTCACC
ACTCCAAGAATTGGAGCCAATCGATTCTTGCGGAGAACTGTGAATGCGCAAACCA
ACCCTTGGCAGAACATATCCATCGCGTCCGCCATCTCCAGCAGCCGCACGCGGC
GCATCTCGGGCAGCGTTGGGTCCTGGCCACGGGTGCGCATGATCGTGCTCCTGT
CGTTGAGGACCCGGCTAGGCTGGCGGGGTTGCCTTACTGGTTAGCAGAATGAATC
ACCGATACGCGAGCGAACGTGAAGCGACTGCTGCTGCAAAACGTCTGCGACCTG
AGCAACAACATGAATGGTCTTCGGTTTCCGTGTTTCGTAAAGTCTGGAAACGCGGA
AGTCAGCGCCCTGCACCATTATGTTCCGGATCTGGGTACCGAGCTCGAATTCACT
GGCCGTCGTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACTTAAT
CGCCTTGCAGCACATCCCCCTTTCGCCAGGCATCGCAGGATGCTGCTGGCTACCC
TGTGGAACACCTACATCTGTATTAACGAAGCGCTGGCATTGACCCTGAGTGATTTT
TCTCTGGTCCCGCCGCATCCATACCGCCAGTTGTTTACCCTCACAACGTTCCAGTA
ACCGGGCATGTTCATCATCAGTAACCCGTATCGTGAGCATCCTCTCTCGTTTCATC
GGTATCATTACCCCCATGAACAGAAATTCCCCCTTACACGGAGGCATCAAGTGACC
AAACAGGAAAAAACCGCCCTTAACATGGCCCGCTTTATCAGAAGCCAGACATTAAC
GCTTCTGGAGAAACTCAACGAGCTGGACGCGGATGAACAGGCAGACATCTGTGAA
TCGCTTCACGACCACGCTGATGAGCTTTACCGCAGCTGCCTCGCGCGTTTCGGTG
ATGACGGTGAAAACCTCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCT
GTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTTG
GCGGGTGTCGGGGCGCAGCCATGACCCAGTCACGTAGCGATAGCGGAGTGTATA
CTGGCTTAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATATGCGG
TGTGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCGCTCTTCCG
CTTCCTCGCTCACTGACTCGCTGCGCTCGGTCGTTCGGCTGCGGCGAGCGGTAT
CAGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGG
AAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGC
GTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCCTGACGAGCATCACAAAAATCGA
CGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTC
CCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATA
CCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCATAGCTCACGCTGT
AGGTATCTCAGTTCGGTGTAGGTCGTTCGCTCCAAGCTGGGCTGTGTGCACGAAC

FIGURE 23

CCCCCGTTCAGCCCGACCGCTGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAA
CCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGC
AGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACG
GCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTC
GGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTG
GTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAAGGATCTCAAGAAGAT
CCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGG
GATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAA
ATGAAGTTTTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCA
ATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTCGTTCATCCATAGT
TGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGC
CCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAG
CAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATC
CGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTCGCCA
GTTAATAGTTTGCGCAACGTTGTTGCCATTGCTGCAGGCATCGTGGTGTCACGCT
CGTCGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTAC
ATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTG
TCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAAT
TCTCTTACTGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAAC
CAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCA
ACACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATTGGAAA
ACGTTCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCG
ATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTCACCAGCGT
TTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCG
ACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGCATTTATC
AGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAA
TAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCAT
TATTATCATGACATTAACCTATAAAAATAGGCGTATCACGAGGCCCTTTCGTCTTCA
AGAATTCTCATGTTTGACAGCTTATCATCGATAAGCTTTAATGCGGTAGTTTATCAC
AGTTAAATTGCTAACGCAGTCAGGCACCGTGTATGAAATCTAACAATGCGCTCATC
GTCATCCTCGGCACCGTCACCCTGGATGCTGTAGGCATAGGCTTGGTTATGCCGG
TACTGCCGGGCCTCTTGCGGGATATCGTCCATTCCGACAGCATCGCCAGTCACTA
TGGCGTGCTGCTAGCGCTATATGCGTTGATGCAATTTCTATGCGCACCCGTTCTC
GGAGCACTGTCCGACCGCTTTGGCCGCCGCCCAGTCCTGCTCGCTTCGCTACTTG
GAGCCACTATCGACTACGCGATCATGGCGACCACACCCGTCCTGTGGATCCCAGA
CGAGTTAAGTCACCATACGTTAGTACAGGTTGCCACTCTTTTGGCAGACGCAGACC
TACGGCTACAATAGCGAAGCGGTCCTGGTATTCATGTTTAAAAATACTGTCGCGAT
AGCCAAAACGGCACTCTTTGGCAGTTAAGCGCACTTGCTTGCCTGTCGCCAGTTC
AACAGAATCAACATAAGCGCAAACTCGCTGTAATTCTACGCCATAAGCACCAATAT
TCTGGATAGGTGATGAGCCGACACAACCAGGAATTAATGCCAGATTTTCCAGACCA
GGCATACCTTCCTGCAAAGTGTATTTTACCAGACGATGCCAGTTTTCTCCGGCTCC
TACATGTAAATACCACGCATCAGGTTCATCATGAATTTCGATACCTTTGATCCGGTT
GATGATCACCGTGCCGCGATAGTCCTCCAGAAAAAGTACATTACTTCCTTCACCCA
GAATAAGAACGGGTTGTCCTTCTGCGGTTGCATACTGCCAGGCATTGAGTAATTGT
TGTTCGTCTTCGGCACATACAATGTGCTGAGCATTATGATCAATGCCAAATGTGTT
CCAGGGTTTTAAGGAGTGGTTCATAGCTGCTTTCCTGATGCAAAAACGAGGCTAGT

FIGURE 23 Cont.

TTACCGTATCTGTGGGGGGATGGCTTGTAGATATGACGACAGGAAGAGTTTGTAG
AAACGCAAAAAGGCCATCCGTCAGGATGGCCTTCTGCTTAATTTGATGCCTGGCA
GTTTATGGCGGGCGTCCTGCCCGCCACCCTCCGGGCCGTTGCTTCGCAACGTTC
AAATCCGCTCCCGGCGGATTTGTCCTACTCAGGAGAGCGTTCACCGACAAACAAC
AGATAAAACGAAAGGCCCAGTCTTTCGACTGAGCCTTTCGTTTTATTTGATGCCTG
GCAGTTCCCTACTCTCGCATGGGGAGACCCCACACTACCATCGGCGCTACGGCGT
TTCACTTCTGAGTTCGGCATGGGGTCAGGTGGGACCACCGCGCTACTGCCGCCA
GGCAAATTCTGTTTTATCAGACCGCTTCTGCGTTCTGATTTAATCTGTATCAGGCT
GAAAATCTTCTCTCATCCGCCAAAACAGCTTCGGCGTTGTAAGGTTAAGCCTCACG
GTTCATTAGTACCGGTTAGCTCAACGCATCGCTGCGCTTACACACCCGGCCTATCA
ACGTCGTCGTCTTCAACGTTCCTTCAGGACCCTTAAAGGGTCAGGGAGAACTCAT
CTCGGGGCAAGTTTCGTGCTTAGATGCTTTCAGCACTTATCTCTTCCGCATTTAGC
TACCGGGCAGTGCCATTGGCATGACAACCCGAACACCAGTGATGCGTCCACTCCG
GTCCTCTCGTACTAGGAGCAGCCCCCCTCAGTTCTCCAGCGCCCACGGCAGATAG
GGACCGAACTGTCTCACGACGTTCTAAACCCAGCTCGCGTACCACTTTAAATGGC
GAACAGCCATACCCTTGGGACCTACTTCAGCCCCAGGATGTGATGAGCCGACATC
GAGGTGCCAAACACCGCCGTCGATATGAACTCTTGGGCGGTATCAGCCTGTTATC
CCCGGAGTACCTTTTATCCGTTGAGCGATGGCCCTTCCATTCAGAACCACCGGAT
CACTATGACCTGCTTTCGCACCTGCTCGCGCCGTCACGCTCGCAGTCAAGCTGGC
TTATGCCATTGCACTAACCTCCTGATGTCCGACCAGGATTAGCCAACCTTCGTGCT
CCTCCGTTACTCTTTAGGAGGAGACCGCCCCAGTCAAACTACCCACCAGACACTG
TCCGCAACCCGGATTACGGGTCAACGTTAGAACATCAAACATTAAAGGGTGGTATT
TCAAGGTCGGCTCCATGCAGACTGGCGTCCACACTTCAAAGCCTCCCACCTATCC
TACACATCAAGGCTCAATGTTCAGTGTCAAGCTATAGTAAAGGTTCACGGGGTCTT
TCCGTCTTGCCGCGGGTACACTGCATCTTCACAGCGAGTTCAATTTCACTGAGTCT
CGGGTGGAGACAGCCTGGCCATCATTACGCCATTCGTGCAGGTCGGAACTTACCC
GACAAGGAATTTCGCTACCTTAGGACCGTTATAGTTACGGCCGCCGTTTACCGGG
GCTTCGATCAAGAGCTTCGCTTGCGCTAACCCCATCAATTAACCTTCCGGCACCG
GGCAGGCGTCACACCGTATACGTCCACTTTCGTGTTTGCACAGTGCTGTGTTTTTA
ATAAACAGTTGCAGCCAGCTGGTATCTTCGACTGATTTCAGCTCCATCCGCGAGG
GACCTCACCTACATATCAGCGTGCCTTCTCCCGAAGTTACGGCACCATTTTGCCTA
GTTCCTTCACCCGAGTTCTCTCAAGCGCCTTGGTATTCTCTACCTGACCACCTGTG
TCGGTTTGGGGTACGATTTGATGTTACCTGATGCTTAGAGGCTTTTCCTGGAAGCA
GGGCATTTGTTGCTTCAGCACCGTAGTGCCTCGTCATCACGCCTCAGCCTTGATTT
TCCGGATTTGCCTGGAAAACCAGCCTACACGCTTAAACCGGGACAACCGTCGCCC
GGCCAACATAGCCTTCTCCGTCCCCCCTTCGCAGTAACACCAAGTACAGGAATATT
AACCTGTTTCCCATCGACTACGCCTTTCGGCCTCGCCTTAGGGGTCGACTCACCC
TGCCCCGATTAACGTTGGACAGGAACCCTTGGTCTTCCGGCGAGCGGGCTTTTCA
CCCGCTTTATCGTTACTTATGTCAGCATTCGCACTTCTGATACCTCCAGCATGCCT
CACAGCACACCTTCGCAGGCTTACAGAACGCTCCCCTACCCAACAACGCATAAGC
GTCGCTGCCGCAGCTTCGGTGCATGGTTTAGCCCCGTTACATCTTCCGCGCAGGC
CGACTCGACCAGTGAGCTATTACGCTTTCTTTAAATGATGGCTGCTTCTAAGCCAA
CATCCTGGCTGTCTGGGCCTTCCCACATCGTTTCCCACTTAACCATGACTTTGGGA
CCTTAGCTGGCGGTCTGGGTTGTTTCCCTCTTCACGACGGACGTTAGCACCCGCC
GTGTGTCTCCCGTGATAACATTCTCCGGTATTCGCAGTTTGCATCGGGTTGGTAAG
TCGGGATGACCCCCTTGCCGAAACAGTGCTCTACCCCCGGAGATGAATTCACGAG

FIGURE 23 Cont.

GCGCTACCTAAATAGCTTTCGGGGAGAACCAGCTATCTCCCGGTTTGATTGGCCT
TTCACCCCCAGCCACAAGTCATCCGCTAATTTTTCAACATTAGTCGGTTCGGTCCT
CCAGTTAGTGTTACCCAACCTTCAACCTGCCCATGGCTAGATCACCGGGTTTCGG
GTCTATACCCTGCAACTTAACGCCCAGTTAAGACTCGGTTTCCCTTCGGCTCCCCT
ATTCGGTTAACCTTGCTACAGAATATAAGTCGCTGACCCATTATACAAAAGGTACG
CAGTCACACGCCTAAGCGTGCTCCCACTGCTTGTACGTACACGGTTTCAGGTTCTT
TTTCACTCCCCTCGCCGGGGTTCTTTTCGCCTTTCCCTCACGGTACTGGTTCACTA
TCGGTCAGTCAGGAGTATTTAGCCTTGGAGGATGGTCCCCCCATATTCAGACAGG
ATACCACGTGTCCCGCCCTACTCATCGAGCTCACAGCATGTGCATTTTTGTGTACG
GGGCTGTCACCCTGTATCGCGCGCCTTTCCAGACGCTTCCACTAACACACACACT
GATTCAGGCTCTGGGCTGCTCCCCGTTCGCTCGCCGCTACTGGGGGAATCTCGG
TTGATTTCTTTTCCTCGGGGTACTTAGATGTTTCAGTTCCCCCGGTTCGCCTCATTA
ACCTATGGATTCAGTTAATGATAGTGTGTCGAAACACACTGGGTTTCCCCATTCGG
AAATCGCCGGTTATAACGGTTCATATCACCTTACCGACGCTTATCGCAGATTAGCA
CGTCCTTCATCGCCTCTGACTGCCAGGGCATCCACCGTGTACGCTTAGTCGCTTA
ACCTCACAACCCGAAGATGTTTCTTTCGATTCATCATCGTGTTGCGAAAATTTGAG
AGACTCACGAACAACTCTCGTTGTTCAGTGTTTCAATTTTCAGCTTGATCCAGATTT
TTAAAGAGCAAAAATCTCAAACATCACCCGAAGATGAGTTTTGAGATATTAAGGTC
GGCGACTTTCACTCACAAACCAGCAAGTGGCGTCCCCTAGGGGATTCGAACCCCT
GTTACCGCCGTGAAAGGGCGGTGTCCTGGGCCTCTAGACGAAGGGGACACGAAA
ATTGCTTATCACGCGTTGCGTGATATTTTCGTGTAGGGTGAGCTTTCATTAATAGA
AAGCGAACGGCCTTATTCTCTTCAGCCTCACTCCCAACGCGTAAACGCCTTGCTTT
TCACTTTCTATCAGACAATCTGTGTGAGCACTACAAAGTACGCTTCTTTAAGGTAAT
CCCATGATCCAACCGCAGGTTCCCCTACGGTTACCTTGTTACGACTTCACCCCAGT
CATGAATCACAAAGTGGTAAGCGCCCTCCCGAAGGTTAAGCTACCTACTTCTTTTG
CAACCCACTCCCATGGTGTGACGGGCGGTGTGTACAAGGCCCGGGAACGTATTC
ACCGTGGCATTCTGATCCACGATTACTAGCGATTCCGACTTCATGGAGTCGAGTTG
CAGACTCCAATCCGGACTACGACGCACTTTATGAGGTCCGCTTGCTCTCGCGAGG
TCGCTTCTCTTTGTATGCGCCATTGTAGCACGTGTGTAGCCCTGGTCGTAAGGGC
CATGATGACTTGACGTCATCCCCACCTTCCTCCAGTTTATCACTGGCAGTCTCCTT
TGAGTTCCCGGCCGGACCGCTGGCAACAAAGGATAAGGGTTGCGCTCGTTGCGG
GACTTAACCCAACATTTCACAACACGAGCTGACGACAGCCATGCAGCACCTGTCT
CACGGTTCCCGAAGGCACATTCTCATCTCTGAAAACTTCCGTGGATGTCAAGACCA
GGTAAGGTTCTTCGCGTTGCATCGAATTAAACCACATGCTCCACCGCTTGTGCGG
GCCCCCGTCAATTCATTTGAGTTTTAACCTTGCGGCCGTACTCCCCAGGCGGTCG
ACTTAACGCGTTAGCTCCGGAAGCCACGCCTCAAGGGCACAACCTCCAAGTCGAC
ATCGTTTACGGCGTGGACTACCAGGGTATCTAATCCTGTTTGCTCCCCACGCTTTC
GCACCTGAGCGTCAGTCTTCGTCCAGGGGGCCGCCTTCGCCACCGGTATTCCTCC
AGATCTCTACGCATTTCACCGCTACACCTGGAATTCTACCCCCCTCTACGAGACTC
AAGCTTGCCAGTATCAGATGCAGTTCCCAGGTTGAGCCCGGGGATTTCACATCTG
ACTTAACAAACCGCCTGCGTGCGCTTTACGCCCAGTAATTCCGATTAACGCTTGCA
CCCTCCGTATTACCGCGGCTGCTGGCACGGAGTTAGCCGGTGCTTCTTCTGCGG
GTAACGTCAATGAGCAAAGGTATTAACTTTACTCCCTTCCTCCCCGCTGAAAGTAC
TTTACAACCCGAAGGCCTTCTTCATACACGCGGCATGGCTGCATCAGGCTTGCGC
CCATTGTGCAATATTCCCCACTGCTGCCTCCCGTAGGAGTCTGGACCGTGTCTCA
GTTCCAGTGTGGCTGGTCATCCTCTCAGACCAGCTAGGGATCGTCGCCTAGGTGA

FIGURE 23 Cont.

GCCGTTACCCCACCTACTAGCTAATCCCATCTGGGCACATCCGATGGCAAGAGGC
CCGAAGGTCCCCCTCTTTGGTCTTGCGACGTTATGCGGTATTAGCTACCGTTTCCA
GTAGTTATCCCCCTCCATCAGGCAGTTTCCCAGACATTACTCACCCGTCCGCCACT
CGTCAGCAAAGAAGCAAGCTTCTTCCTGTTACCGTTCGACTTGCATGTGTTAGGCC
TGCCGCCAGCGTTCAATCTGAGCCATGATCAAACTCTTCAATTTAAAAGTTTGACG
CTCAAAGAATTAAACTTCGTAATGAATTACGTGTTCACTCTTGAGACTTGGTATTCA
TTTTTCGTCTTGCGACGTTAAGAATCCGTATCTTCGAGTGCCCACACAGATTGTCT
GATAAATTGTTAAAGAGCAGTGCCGCTTCGCTTTTTCTCAGCGGCCGCTGTGTGAA
ATTGTTATCCGCTCACAATTCCACACATTATACGAGCCGGAAGCATAAAGTGTAAA
GCCTGGGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGC
CCGCTTTCCAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATGAATCGGCCAACG
CGCGGGGAGAGGCGGTTTGCGTATTGGGCGCCAGGGTGGTTTTTCTTTTCACCA
GTGAGACGGGCAACAGCTGATTGCCCTTCACCGCCTGGCCCTGAGAGAGTTGCA
GCAAGCGGTCCACGCTGGTTTGCCCCAGCAGGCGAAAATCCTGTTTGATGGTGGT
TGACGGCGGGATATAACATGAGCTGTCTTCGGTATCGTCGTATCCCACTACCGAG
ATATCCGCACCAACGCGCAGCCCGGACTCGGTAATGGCGCGCATTGCGCCCAGC
GCCATCTGATCGTTGGCAACCAGCATCGCAGTGGGAACGATGCCCTCATTCAGCA
TTTGCATGGTTTGTTGAAAACCGGACATGGCACTCCAGTCGCCTTCCCGTTCCGCT
ATCGGCTGAATTTGATTGCGAGTGAGATATTTATGCCAGCCAGCCAGACGCAGAC
GCGCCGAGACAGAACTTAATGGGCCCGCTAACAGCGCGATTTGCTGGTGACCCAA
TGCGACCAGATGCTCCACGCCCAGTCGCGTACCGTCTTCATGGGAGAAAATAATA
CTGTTGATGGGTGTCTGGTCAGAGACATCAAGAAATAACGCCGGAACATTAGTGC
AGGCAGCTTCCACAGCAATGGCATCCTGGTCATCCAGCGGATAGTTAATGATCAG
CCCACTGACCCGTTGCGCGAGAAGATTGTGCACCGCCGCTTTACAGGCTTCGACG
CCGCTTCGTTCTACCATCGACACCACCACGCTGGCACCCAGTTGATCGGCGCGAG
ATTTAATCGCCGCGACAATTTGCGACGGCGCGTGCAGGGCCAGACTGGAGGTGG
CAACGCCAATCAGCAACGACTGTTTGCCCGCCAGTTGTTGTGCCACGCGGTTGGG
AATGTAATTCAGCTCCGCCATCGCCGCTTCCACTTTTTCCCGCGTTTTCGCAGAAA
CGTGGCTGGCCTGGTTCACCACGCGGGAAACGGTCTGATAAGAGACACCGGCAT
ACTCTGCGACATCGTATAACGTTACTGGTTTCACATTCACCACCCTGAATTGACTC
TCTTCCGGGCGCTATCATGCCATACCGCGAAAGGTTTTGCACCATTCGATGGTGT
CG

FIGURE 23 Cont.

AAATTGAAGAGTTTGATCATGGCTCAGATTGAACGCTGGCGGCAGGCCTAACACA
TGCAAGTCGAACGGTAACAGGAAGAAGCTTGCTTCTTTGCTGACGAGTGGCGGAC
GGGTGAGTAATGTCTGGGAAACTGCCTGATGGAGGGGGATAACTACTGGAAACG
GTAGCTAATACCGCATAACGTCGCAAGACCAAAGAGGGGGACCTTCGGGCCTCTT
GCCATCGGATGTGCCCAGATGGGATTAGCTAGTAGGTGGGGTAACGGCTCACCTA
GGCGACGATCCCTAGCTGGTCTGAGAGGATGACCAGCCACACTGGAACTGAGAC
ACGGTCCAGACTCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGCA
AGCCTGATGCAGCCATGCCGCGTGTATGAAGAAGGCCTTCGGGTTGTAAAGTACT
TTCAGCGGGGAGGAAGGGAGTAAAGTTAATACCTTTGCTCATTGACGTTACCCGC
AGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCA
AGCGTTAATCGGAATTACTGGGCGTAAAGCGCACGCAGGCGGTTTGTTAAGTCAG
ATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCTGATACTGGCAAGCTTGAG
TCTCGTAGAGGGGGGTAGAATTCCAGGTGTAGCGGTGAAATGCGTAGAGATCTGG
AGGAATACCGGTGGCGAAGGCGGCCCCCTGGACGAAGACTGACGCTCAGGTGCG
AAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGAT
GTCGACTTGGAGGTTGTGCCCTTGAGGCGTGGCTTCCGGAGCTAACGCGTTAAGT
CGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACTCAAATGAATTGACGGGGG
CCCGCACAAGCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGAAGAACCTTAC
CTGGTC
TTGACATCCACGGAAGTTTTCAGAGATGAGAATGTGCCTTCGGGAACCGTGAGAC
AGGTGCTGCATGGCTGTCGTCAGCTCGTGTTGTGAAATGTTGGGTTAAGTCCCGC
AACGAGCGCAACCCTTATCCTTTGTTGCCAGCGGTCCGGCCGGGAACTCAAAGGA
GACTGCCAGTGATAAACTGGAGGAAGGTGGGGATGACGTCAAGTCATCATGGCCC
TTACGACCAGGGCTACACACGTGCTACAATGGCGCATACAAAGAGAAGCGACCTC
GCGAGAGCAAGCGGACCTCATAAAGTGCGTCGTAGTCCGGATTGGAGTCTGCAAC
TCGACTCCATGAAGTCGGAATCGCTAGTAATCGTGGATCAGAATGCCACGGTGAA
TACGTTCCCGGGCCTTGTACACACCGCCCGTCACACCATGGGAGTGGGTTGCAAA
AGAAGTAGGTAGCTTAACCTTCGGGAGGGCGCTTACCACTTTGTGATTCATGACT
GGGGTGAAGTCGTAACAAGGTAACCGTAGGGGAACCTGCGGTTGGATCATGGGA
TTACCTTAAAGAAGCGTACTTTGTAGTGCTCACACAGATTGTCTGATAGAAAGTGA
AAAGCAAGGCGTTTACGCGTTGGGAGTGAGGCTGAAGAGAATAAGGCCGTTCGCT
TTCTATTAATGAAAGCTCACCCTACACGAAAATATCACGCAACGCGTGATAAGCAA
TTTTCGTGTCCCCTTCGTCTAGAGGCCCAGGACACCGCCCTTTCACGGCGGTAAC
AGGGGTTCGAATCCCCTAGGGGACGCCACTTGCTGGTTTGTGAGTGAAAGTCGCC
GACCTTAATATCTCAAAACTCATCTTCGGGTGATGTTTGAGATTTTTGCTCTTTAAA
AATCTGGATCAAGCTGAAAATTGAAACACTGAACAACGAGAGTTGTTCGTGAGTCT
CTCAAATTTTCGCAACACGATGATGAATCGAAAGAAACATCTTCGGGTTGT
GAGGTTAAGCGACTAAGCGTACACGGTGGATGCCCTGGCAGTCAGAGGCGATGA
AGGACGTGCTAATCTGCGATAAGCGTCGGTAAGGTGATATGAACCGTTATAACCG
GCGATTTCCGAATGGGGAAACCCAGTGTGTTTCGACACACTATCATTAACTGAATC
CATAGGTTAATGAGGCGAACCGGGGGAACTGAAACATCTAAGTACCCCGAGGAAA
AGAAATCAACCGAGATTCCCCCAGTAGCGGCGAGCGAACGGGGAGCAGCCCAGA
GCCTGAATCAGTGTGTGTGTTAGTGGAAGCGTCTGGAAAGGCGCGCGATACAGG
GTGACAGCCCCGTACACAAAAATGCACATGCTGTGAGCTCGATGAGTAGGGCGG
GACACGTGGTATCCTGTCTGAATATGGGGGGACCATCCTCCAAGGCTAAATACTC
CTGACTGACCGATAGTGAACCAGTACCGTGAGGGAAAGGCGAAAAGAACCCCGG

FIGURE 24

CGAGGGGAGTGAAAAAGAACCTGAAACCGTGTACGTACAAGCAGTGGGAGCACGCT
TAGGCGTGTGACTGCGTACCTTTTGTATAATGGGTCAGCGACTTATATTCTGTAGCA
AGGTTAACCGAATAGGGGAGCCGAAGGGAAACCGAGTCTTAACTGGGCGTTAAGT
TGCAGGGTATAGACCCGAAACCCGGTGATCTAGCCATGGGCAGGTTGAAGGTTG
GGTAACACTAACTGGAGGACCGAACCGACTAATGTTGAAAAATTAGCGGATGACTT
GTGGCTGGGGGTGAAAGGCCAATCAAACCGGGAGATAGCTGGTTCTCCCCGAAA
GCTATTTAGGTAGCGCCTCGTGAATTCATCTCCGGGGGTAGAGCACTGTTTCGGC
AAGGGGGTCATCCCGACTTACCAACCCGATGCAAACTGCGAATACCGGAGAATGT
TATCACGGGAGACACACGGCGGGTGCTAACGTCCGTCGTGAAGAGGGAAACAAC
CCA
GACCGCCAGCTAAGGTCCCAAAGTCATGGTTAAGTGGGAAACGATGTGGGAAGG
CCCAGACAGCCAGGATGTTGGCTTAGAAGCAGCCATCATTTAAAGAAAGCGTAATA
GCTCACTGGTCGAGTCGGCCTGCGCGGAAGATGTAACGGGGCTAAACCATGCAC
CGAAGCTGCGGCAGCGACGCTTATGCGTTGTTGGGTAGGGGAGCGTTCTGTAAG
CCTGCGAAGGTGTGCTGTGAGGCATGCTGGAGGTATCAGAAGTGCGAATGCTGA
CATAAGTAACGATAAAGCGGGTGAAAAGCCCGCTCGCCGGAAGACCAAGGGTTCC
TGTCCAACGTTAATCGGGGCAGGGTGAGTCGACCCCTAAGGCGAGGCCGAAAGG
CGTAGTCGATGGGAAACAGGTTAATATTCCTGTACTTGGTGTTACTGCGAAGGGG
GGACGGAGAAGGCTATGTTGGCCGGGCGACGGTTGTCCCGGTTTAAGCGTGTAG
GCTGGTTTTCCAGGCAAATCCGGAAAATCAAGGCTGAGGCGTGATGACGAGGCAC
TACGGTGCTGAAGCAACAAATGCCCTGCTTCCAGGAAAAGCCTCTAAGCATCAGG
TAACATCAAATCGTACCCCAAACCGACACAGGTGGTCAGGTAGAGAATACCAAGG
CGCTTGAGAGAACTCGGGTGAAGGAACTAGGCAAAATGGTGCCGTAACTTCGGGA
GAAGGCACGCTGATATGTAGGTGAGGTCCCTCGCGGATGGAGCTGAAATCAGTC
GAAGATACCAGCTGGCTGCAACTGTTTATTAAAAACACAGCACTGTGCAAACACGA
AAGTGGACGTATACGGTGTGACGCCTGCCCGGTGCCGGAAGGTTAATTGATGGG
GTTAGCGCAAGCGAAGCTCTTGATCGAAGCCCCGGTAAACGGCGGCCGTAACTAT
AACGGTCCTAAGGTAGCGAAATTCCTTGTCGGGTAAGTTCCGACCTGCACGAATG
GCGTAA
TGATGGCCAGGCTGTCTCCACCCGAGACTCAGTGAAATTGAACTCGCTGTGAAGA
TGCAGTGTACCCGCGGCAAGACGGAAAGACCCCGTGAACCTTTACTATAGCTTGA
CACTGAACATTGAGCCTTGATGTGTAGGATAGGTGGGAGGCTTTGAAGTGTGGAC
GCCAGTCTGCATGGAGCCGACCTTGAAATACCACCCTTTAATGTTTGATGTTCTAA
CGTTGACCCGTAATCCGGGTTGCGGACAGTGTCTGGTGGGTAGTTTGACTGGGG
CGGTCTCCTCCTAAAGAGTAACGGAGGAGCACGAAGGTTGGCTAATCCTGGTCGG
ACATCAGGAGGTTAGTGCAATGGCATAAGCCAGCTTGACTGCGAGCGTGACGGC
GCGAGCAGGTGCGAAAGCAGGTCATAGTGATCCGGTGGTTCTGAATGGAAGGGC
CATCGCTCAACGGATAAAAGGTACTCCGGGGATAACAGGCTGATACCGCCCAAGA
GTTCATATCGACGGCGGTGTTTGGCACCTCGATGTCGGCTCATCACATCCTGGGG
CTGAAGTAGGTCCCAAGGGTATGGCTGTTCGCCATTTAAAGTGGTACGCGAGCTG
GGTTTAGAACGTCGTGAGACAGTTCGGTCCCTATCTGCCGTGGGCGCTGGAGAAC
TGAGGGGGGCTGCTCCTAGTACGAGAGGACCGGAGTGGACGCATCACTGGTGTT
CGGGTTGTCATGCCAATGGCACTGCCCGGTAGCTAAATGCGGAAGAGATAAGTGC
TGAAAGCATCTAAGCACGAAACTTGCCCCGAGATGAGTTCTCCCTGACCCTTTAAG
GGTCCTGAAGGAACGTTGAAGACGACGACGTTGATAGGCCGGGTGTGTAAGCGC
AGCGATGCGTTGAGCTAACCGGTACTAATGAACCGTGAGGCTTAACCTTACAACG

FIGURE 24 Cont.

CCGAAGCTGTTTTGGCGGATGAGAGAAGATTTTCAGCCTGATACAGATTAAATCAGA
ACGCAGAAGCGGTCTGATAAAACAGAATTTGCCTGGCGGCAGTAGCGCGGTGGTCC
CACCTGACCCCATGCCGAACTCAGAAGTGAAACGCCGTAGCGCCGATGGTAGTGTG
GGGTCTCCCCATGCGAGAGTAGGGA
ACTGCCAGGCATCAAATAAAACGAAAGGCTCAGTCGAAAGACTGGGCCTTTCGTTT
TATCTGTTGTTTGTCGGTGAACGCTCTCCTGAGTAGGACAAATCCGCCGGGAGCG
GATTTGAACGTTGCGAAGCAACGGCCCGGAGGGTGGCGGGCAGGACGCCCGCC
ATAAACTGCCAGGCATCAAATTAAGCAGAAGGCCATCCTGACGGATGGCCTTTTTG
CGTTTCTACAAACTCTTCCTGTCGTCATATCTACAAGCCATCCCCCCACAGATACG
GTAAACTAGCCTCGTTTTTGCATCAGGAAAGCAGCTATGAACCACTCCTTAAAACC
CTGGAACACATTTGGCATTGATCATAATGCTCAGCACATTGTATGGGCCTTAAGGG
CCCAACAATTACTCAATGCCTGGCAGTATGCAACCGCAGAAGGACAACCCGTTCTT
ATTCTGGGTGAAGGAAGTAATGTACTTTTTCTGGAGGACTATCGCGGCACGGTGA
TCATCAACCGGATCAAAGGTATCGAAATTCATGATGAACCTGATGCGTGGTATTTA
CATGTAGGAGCCGGAGAAAACTGGCATCGTCTGGTAAAATACACTTTGCAGGAAG
GTATGCCTGGTCTGGAAAATCTGGCATTAATTCCTGGTTGTGTCGGCTCATCACCT
ATCCAGAATATTGGTGCTTATGGCGTAGAATTACAGCGAGTTTGCGCTTATGTTGA
TTCTGTTGAACTGGCGACAGGCAAGCAAGTGCGCTTAACTGCCAAAGAGTGCCGT
TTTGGCTATCGCGACAGTATTTTTAAACATGAATACCAGGACCGCTTCGCTATTGT
AGCCGTAGGTCTGCGTCTGCCAAAAGAGTGGCAACCTGTACTAACGTATGGTGAC
TTAACTCGTCTGGGATCCACAGGACGGGTGTGGTCGCCATGATCGCGTAGTCGAT
AGTGGCTCCAAGTAGCGAAGCGAGCAGGACTGGGCGGCGGCCAAAGC
GGTCGGACAGTGCTCCGAGAACGGGTGCGCATAGAAATTGCATCAACGCATATAG
CGCTAGCAGCACGCCATAGTGACTGGCGATGCTGTCGGAATGGACGATATCCCG
CAAGAGGCCCGGCAGTACCGGCATAACCAAGCCTATGCCTACAGCATCCAGGGT
GACGGTGCCGAGGATGACGATGAGCGCATTGTTAGATTTCATACACGGTGCCTGA
CTGCGTTAGCAATTTAACTGTGATAAACTACCGCATTAAAGCTTATCGATGATAAGC
TGTCAAACATGAGAATTCTTGAAGACGAAAGGGCCTCGTGATACGCCTATTTTTAT
AGGTTAATGTCATGATAATAATGGTTTCTTAGACGTCAGGTGGCACTTTTCGGGGA
AATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACATTCAAATATGTATCCG
CTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATG
AGTATTCAACATTTCCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCT
GTTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAAGATGCTGAAGATCAGTTGG
GTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAG
TTTTCGCCCCGAAGAACGTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTG
GCGCGGTATTATCCCGTGTTGACGCCGGGCAAGAGCAACTCGGTCGCCGCATAC
ACTATTCTCAGAATGACTTGGTTGAGTACTCACCAGTCACAGAAAAGCATCTTACG
GATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAACAC
TGCGGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTT
TTGCACAACATGGGGGATCATGTAACTCGCCTTGATCGTTGGGAA
CCGGAGCTGAATGAAGCCATACCAAACGACGAGCGTGACACCACGATGCCTGCA
GCAATGGCAACAACGTTGCGCAAACTATTAACTGGCGAACTACTTACTCTAGCTTC
CCGGCAACAATTAATAGACTGGATGGAGGCGGATAAAGTTGCAGGACCACTTCTG
CGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCCGGTGAGC
GTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTAT
CGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAG

FIGURE 24 Cont.

ATCGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAACTGTCAGACCAAGTTTAC
TCATATATACTTTAGATTGATTTAAAACTTCATTTTTAATTTAAAAGGATCTAGGTGA
AGATCCTTTTTGATAATCTCATGACCAAAATCCCTTAACGTGAGTTTTCGTTCCACTG
AGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCG
CGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTGTTTGC
CGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACTGGCTTCAGCAGAGCGCA
GATACCAAATACTGTCCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACT
CTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGC
CAGTGGCGATAAGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGAT
AAGGCGCAGCGGTCGGGCTGAACGGGGGGTTCGTGCACACAGCCCAGCTTGGA
GCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCC
ACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGC
AGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTAT
CTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATG
CTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTACG
GTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATGTTCTTTCCTGCGTTATCCCCTG
ATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGATACCGCTCGCCGCAG
CCGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGCGGAAGAGCGCCTGAT
GCGGTATTTTCTCCTTACGCATCTGTGCGGTATTTCACACCGCATATGGTGCACTC
TCAGTACAATCTGCTCTGATGCCGCATAGTTAAGCCAGTATACACTCCGCTATCGC
TACGTGACTGGGTCATGGCTGCGCCCCGACACCCGCCAACACCCGCTGACGCGC
CCTGACGGGCTTGTCTGCTCCCGGCATCCGCTTACAGACAAGCTGTGACCGTCTC
CGGGAGCTGCATGTGTCAGAGGTTTTCACCGTCATCACCGAAACGCGCGAGGCA
GCTGCGGTAAAGCTCATCAGCGTGGTCGTGAAGCGATTCACAGATGTCTGCCTGT
TCATCCGCGTCCAGCTCGTTGAGTTTCTCCAGAAGCGTTAATGTCTGGCTTCTGAT
AAAGCGGGCCATGTTAAGGGCGGTTTTTTCCTGTTTGGTCACTTGATGCCTCCGT
GTAAGGGGGAATTTCTGTTCATGGGGGTAATGATACCGATGAAACGAGAGAGGAT
GCTCACGATACGGGTTACTGATGATGAACATGCCCGGTTACTGGAACGTTGTGAG
GGTAAACAACTGGCGGTATGGATGCGGCGGGACCAGAGAAAAATCACTCAGGGT
CAATGCCAGCGCTTCGTTAATACAGATGTAGGTGTTCCACAGGGTAGCCAGCAGC
ATCCTGCGATGCCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAGTTGGGTA
ACGCCAGGGTTTTCCCAGTCACGACGTTGTAAAACGACGGCCAGTGAATTCGAGC
TCGGTACCTGCACTGACGACAGGAAGAG
TTTGTAGAAACGCAAAAAGGCCATCCGTCAGGATGGCCTTCTGCTTAATTTGATGC
CTGGCAGTTTATGGCGGGCGTCCTGCCCGCCACCCTCCGGGCCGTTGCTTCGCA
ACGTTCAAATCCGCTCCCGGCGGATTTGTCCTACTCAGGAGAGCGTTCACCGACA
AACAACAGATAAAACGAAAGGCCCAGTCTTTCGACTGAGCCTTTCGTTTTATTTGA
TGCCTGGCAGTTCCCTACTCTCGCATGGGGAGACCCCACACTACCATCGGCGCTA
CGACTAGATTATTTGTAGAGCTCATCCATGCCATGTGTAATCCCAGCAGCAGTTAC
AAACTCAAGAAGGACCATGTGGTCACGCTTTTCGTTGGGATCTTTCGAAAGGGCA
GATTGTGTCGACAGGTAATGGTTGTCTGGTAAAAGGACAGGGCCATCGCCAATTG
GAGTATTTTGTTGATAATGGTCTGCTAGTTGAACGGATCCATCTTCAATGTTGTGG
CGAATTTTGAAGTTAGCTTTGATTCCATTCTTTTGTTTGTCTGCCGTGATGTATACA
TTGTGTGAGTTATAGTTGTACTCGAGTTTGTGTCCGAGAATGTTTCCATCTTCTTTA
AAATCAATACCTTTTAACTCGATACGATTAACAAGGGTATCACCTTCAAACTTGACT
TCAGCACGCGTCTTGTAGTTCCCGTCATCTTTGAAAGATATAGTGCGTTCCTGTAC

FIGURE 24 Cont.

ATAACCTTCGGGCATGGCACTCTTGAAAAAGTCATGCCGTTTCATATGATCCGGATA
ACGGGAAAAGCATTGAACACCATAAGAGAAAGTAGTGACAAGTGTTGGCCATGGA
ACAGGTAGTTTTCCAGTAGTGCAAATAAATTTAAGGGTAAGCTTTCCGTATGTAGC
ATCACCTTCACCCTCTCCACTGACAGAAAATTTGTGCCCATTAACATCACCATCTAA
TTCAACAAGAATTGGGACAACTCCAGTGAAAAGTTCTTCT
CCTTTGCTCGCAGTGATTTTTTTCTCCATTTGCGGAGGGATATGAAAGCGGCCGCT
TCCACACATTAAACTAGTTCGATGATTAATTGTCAACAGCTCGCCGGCGGCACCTC
GCTAACGGATTCACCACTCCAAGAATTGGAGCCAATCGATTCTTGCGGAGAACTGT
GAATGCGGGTACCCAGATCCGGAACATAATGGTGCAGGGCGCTGACTTCCGCGTT
TCCAGACTTTACGAAACACGGAAACCGAAGACCATTCATGTTGTTGCTCAGGTCGC
AGACGTTTTGCAGCAGCAGTCGCTTCACGTTCGCTCGCGTATCGGTGATTCATTCT
GCTAACCAGTAAGGCAACCCCGCCAGCCTAGCCGGGTCCTCAACGACAGGAGCA
CGATCATGCGCACCCGTGGCCAGGACCCAACGCTGCCCGAGATGCGCCGCGTGC
GGCTGCTGGAGATGGCGGACGCGATGGATATGTTCTGCCAAGGGTTGGTTTGCG
CATTCACAGTTCTCCGCAAGAATCGATTGGCTCCAATTCTTGGAGTGGTGAATCCG
TTAGCGAGGTGCCGCCGGCGAGCTGTTGACAATTAATCATCGAACTAGTTTAATGT
GTGGAAGCGGCCGCTTTCATATCCCTCCGCAAATGGAGAAAAAAATCACTGGATAT
ACCACCGTTGATATATCCCAATGGCATCGTAAAGAACATTTTGAGGCATTTCAGTC
AGTTGCTCAATGTACCTATAACCAGACCGTTCAGCTGGATATTACGGCCTTTTTAA
AGACCGTAAAGAAAAATAAGCACAAGTTTTATCCGGCCTTTATTCACATTCTTGCCC
GCCTGATGAATGCTCATCCGGAATTCCGTATGGCAATGAAAGACGGTGAGCTGGT
GATATGGGATAGTGTTCACCCTTGTTACACCGTTTTCCATGAGCAAACTGAAACGT
TTTCATCGCTCTGGAGTGAATACCACGACGATTTCCGGCAGTTTC
TACACATATATTCGCAAGATGTGGCGTGTTACGGTGAAAACCTGGCCTATTTCCCT
AAAGGGTTTATTGAGAATATGTTTTTCGTCTCAGCCAATCCCTGGGTGAGTTTCAC
CAGTTTTGATTTAAACGTGGCCAATATGGACAACTTCTTCGCCCCCGTTTTCACCA
TGGGCAAATATTATACGCAAGGCGACAAGGTGCTGATGCCGCTGGCGATTCAGGT
TCATCATGCCGTCTGTGATGGCTTCCATGTCGGCAGAATGCTTAATGAATTACAAC
AGTACTGCGATGAGTGGCAGGGCGGGGCGTAATTTTTTTAAGGCAGTTATTGGTG
CCCTTAAACGCCTGGTGCTACGCCTGAATAAGTGATAATAAGCGGATGAATGGCA
GAAATTCGAAAGCAAATTCGACCCGGTCGTCGGTTCAGGGCAGGGTCGTTAAATA
GCCGCTTATGTCTATTGCTGGTTTACGGTTTATTGACTACCCGAAGCAGTGTGACC
CTGTGCTTCTCAAATGCCTGAGGGCAGTTTGCTCAGGTCTCCCGTGGGGGGGAAT
AATTAACGGTATGAGCCTTACGGCGGACGGATCGTGGCCGCAAGTGGGTCCGGC
TAGAGGATCCGACACCATCGAATGGTGCAAAACCTTTCGCGGTATGGCATGATAG
CGCCCGGAAGAGAGTCAATTCAGGGTGGTGAATGTGAAACCAGTAACGTTATACG
ATGTCGCAGAGTATGCCGGTGTCTCTTATCAGACCGTTTCCCGCGTGGTGAACCA
GGCCAGCCACGTTTCTGCGAAAACGCGGGAAAAAGTGGAAGCGGCGATGGCGGA
GCTGAATTACATTCCCAACCGCGTGGCACAACAACTGGCGGGCAAACAGTCGTTG
CTGATTGGCGTTGCCACCTCCAGTCTGGCCCTGCACGCGCCGTCGCAAATTGTCG
CGGCGATTAAATCTCGCGCCGATCAACTGGGTGCCAGCGTGGTGGTGTCGAT
GGTAGAACGAAGCGGCGTCGAAGCCTGTAAAGCGGCGGTGCACAATCTTCTCGC
GCAACGGGTCAGTGGGCTGATCATTAACTATCCGCTGGATGACCAGGATGCCATT
GCTGTGGAAGCTGCCTGCACTAATGTTCCGGCGTTATTTCTTGATGTCTCTGACCA
GACACCCATCAACAGTATTATTTTCTCCCATGAAGACGGTACGCGACTGGGCGTG
GAGCATCTGGTCGCATTGGGTCACCAGCAAATCGCGCTGTTAGCGGGCCCATTAA

FIGURE 24 Cont.

GTTCTGTCTCGGCGCGTCTGCGTCTGGCTGGCTGGCATAAATATCTCACTCGCAATC
AAATTCAGCCGATAGCGGAACGGGAAGGCGACTGGAGTGCCATGTCCGGTTTTCA
ACAAACCATGCAAATGCTGAATGAGGGCATCGTTCCCACTGCGATGCTGGTTGCC
AACGATCAGATGGCGCTGGGCGCAATGCGCGCCATTACCGAGTCCGGGCTGCGC
GTTGGTGCGGATATCTCGGTAGTGGGATACGACGATACCGAAGACAGCTCATGTT
ATATCCCGCCGTCAACCACCATCAAACAGGATTTTCGCCTGCTGGGGCAAACCAG
CGcGGACCGCTTGCTGCAACTCTCTCAGGGCCAGGCGGTGAAGGGCAATCAGCT
GTTGCCCGTCTCACTGGTGAAAAGAAAAACCACCCTGGCGCCCAATACGCAAACC
GCCTCTCCCCGCGCGTTGGCCGATTCATTAATGCAGCTGGCACGACAGGTTTCCC
GACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATT
AGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATAATGTGTGGAATTGTG
AGCGGATAACAATTTCACACAGCGGCCGCTGAGAAAAAGCGAAGCGGCACTGCTC
TTTAACAATTTATCAGACAATCTGTGTGGGCACTCGAAGATACGGATTCTTAACGT
CGCAAGACGAAAAATGAATACCAAGTCTCAAGAGTGAACACGTAATTCATTACGAA
GTTTAATTCTTTGAGCGTCAAACTTTTAACGACGGCCAGTGAATTCGAGCTCGGTA
CCTGCACTGACGACAGGAAGAG

FIGURE 24 Cont.

AAATTGAAGAGTTTGATCATGGCTCAGATTGAACGCTGGCGGCAGGCCTAACACA
TGCAAGTCGAACGGTAACAGGAAGAAGCTTGCTTCTTTGCTGACGAGTGGCGGAC
GGGTGAGTAATGTCTGGGAAACTGCCTGATGGAGGGGGATAACTACTGGAAACG
GTAGCTAATACCGCATAACGTCGCAAGACCAAAGAGGGGGACCTTCGGGCCTCTT
GCCATCGGATGTGCCCAGATGGGATTAGCTAGTAGGTGGGGTAACGGCTCACCTA
GGCGACGATCCCTAGCTGGTCTGAGAGGATGACCAGCCACACTGGAACTGAGAC
ACGGTCCAGACTCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGCA
AGCCTGATGCAGCCATGCCGCGTGTATGAAGAAGGCCTTCGGGTTGTAAAGTACT
TTCAGCGGGGAGGAAGGGAGTAAAGTTAATACCTTTGCTCATTGACGTTACCCGC
AGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCA
AGCGTTAATCGGAATTACTGGGCGTAAAGCGCACGCAGGCGGTTTGTTAAGTCAG
ATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCTGATACTGGCAAGCTTGAG
TCTCGTAGAGGGGGGTAGAATTCCAGGTGTAGCGGTGAAATGCGTAGAGATCTGG
AGGAATACCGGTGGCGAAGGCGGCCCCCTGGACGAAGACTGACGCTCAGGTGCG
AAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGAT
GTCGACTTGGAGGTTGTGCCCTTGAGGCGTGGCTTCCGGAGCTAACGCGTTAAGT
CGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACTCAAATGAATTGACGGGGG
CCCGCACAAGCGGCGGAGCATGTGGATTAATTCGATGCAACGCGAAGAACCTTAC
CTGGGTTTGACATGCACAGGACGCGTCTAGAGATAGGCGTTCCCTTGTGGCCTGT
GTGCAGGTGGTGCATGGCTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAGTC
CCGCAACGAGCGCAACCCTTGTCTCATGTTGCCAGCACGTAATGGTGGGGACTCG
TGAGAGACTGCCGGGGTCAACTCGGAGGAAGGTGGGGATGACGTCAAGTCATCA
TGCCCCTTATGTCCAGGGCTTCACACATGCTACAATGGCCGGTACAAAGGGCTGC
GATGCCGCGAGGTTAAGCGAATCCTTAAAAGCCGGTCTCAGTTCGGATCGGGGTC
TGCAACTCGACCCCGTGAAGTCGGAGTCGCTAGTAATCGCAGATCAGCAACGCTG
CGGTGAATACGTTCCCGGGCCTTGTACACACCGCCCGTCACGTCATGAAAGTCGG
TAACACCCGAAGCCAGTGGCCTAACCCTCGGGAGGGAGCTGTCGAAGGTGGGAT
CGGCGATTGGGACGAAGTCGTAACAAGGTAACCGTAGGGGAACCTGCGGTTGGA
TCATGGGATTACCTTAAAGAAGCGTACTTTGTAGTGCTCACACAGATTGTCTGATA
GAAAGTGAAAAGCAAGGCGTTTACGCGTTGGGAGTGAGGCTGAAGAGAATAAGG
CCGTTCGCTTTCTATTAATGAAAGCTCACCCTACACGAAAATATCACGCAACGCGT
GATAAGCAATTTTCGTGTCCCCTTCGTCTAGAGGCCCAGGACACCGCCCTTTCAC
GGCGGTAACAGGGGTTCGAATCCCCTAGGGGACGCCACTTGCTGGTTTGTGAGT
GAAAGTCGCCGACCTTAATATCTCAAAACTCATCTTCGGGTGATGTTTGAGATTTTT
GCTCTTTAAAAATCTGGATCAAGCTGAAAATTGAAACACTGAACAACGAGAGTTGT
TCGTGAGTCTCTCAAATTTTCGCAACACGATGATGAATCGAAAGAAACATCTTCGG
GTTGTGAGGTTAAGCGACTAAGCGTACACGGTGGATGCCCTGGCAGTCAGAGGC
GATGAAGGACGTGCTAATCTGCGATAAGCGTCGGTAAGGTGATATGAACCGTTAT
AACCGGCGATTTCCGAATGGGGAAACCCAGTGTGTTTCGACACACTATCATTAACT
GAATCCATAGGTTAATGAGGCGAACCGGGGGAACTGAAACATCTAAGTACCCCGA
GGAAAAGAAATCAACCGAGATTCCCCCAGTAGCGGCGAGCGAACGGGGAGCAGC
CCAGAGCCTGAATCAGTGTGTGTGTTAGTGGAAGCGTCTGGAAAGGCGCGCGATA
CAGGGTGACAGCCCCGTACACAAAAATGCACATGCTGTGAGCTCGATGAGTAGGG
CGGGACACGTGGTATCCTGTCTGAATATGGGGGGACCATCCTCCAAGGCTAAATA
CTCCTGACTGACCGATAGTGAACCAGTACCGTGAGGGAAAGGCGAAAAGAACCCC
GGCGAGGGGAGTGAAAAAGAACCTGAAACCGTGTACGTACAAGCAGTGGGAGCA

FIGURE 25

CGCTTAGGCGTGTGACTGCGTACCTTTTGTATAATGGGTCAGCGACTTATATTCTG
TAGCAAGGTTAACCGAATAGGGGAGCCGAAGGGAAACCGAGTCTTAACTGGGCGT
TAAGTTGCAGGGTATAGACCCGAAACCCGGTGATCTAGCCATGGGCAGGTTGAAG
GTTGGGTAACACTAACTGGAGGACCGAACCGACTAATGTTGAAAAATTAGCGGAT
GACTTGTGGCTGGGGGTGAAAGGCCAATCAAACCGGGAGATAGCTGGTTCTCCC
CGAAAGCTATTTAGGTAGCGCCTCGTGAATTCATCTCCGGGGGGTAGAGCACTGTT
TCGGCAAGGGGGTCATCCCGACTTACCAACCCGATGCAAACTGCGAATACCGGAG
AATGTTATCACGGGAGACACACGGCGGGTGCTAACGTCCGTCGTGAAGAGGGAA
ACAACCCAGACCGCCAGCTAAGGTCCCAAAGTCATGGTTAAGTGGGAAACGATGT
GGGAAGGCCCAGACAGCCAGGATGTTGGCTTAGAAGCAGCCATCATTTAAAGAAA
GCGTAATAGCTCACTGGTCGAGTCGGCCTGCGCGGAAGATGTAACGGGGCTAAA
CCATGCACCGAAGCTGCGGCAGCGACGCTTATGCGTTGTTGGGTAGGGGAGCGT
TCTGTAAGCCTGCGAAGGTGTGCTGTGAGGCATGCTGGAGGTATCAGAAGTGCGA
ATGCTGACATAAGTAACGATAAAGCGGGTGAAAAGCCCGCTCGCCGGAAGACCAA
GGGTTCCTGTCCAACGTTAATCGGGGCAGGGTGAGTCGACCCCTAAGGCGAGGC
CGAAAGGCGTAGTCGATGGGAAACAGGTTAATATTCCTGTACTTGGTGTTACTGC
GAAGGGGGGACGGAGAAGGCTATGTTGGCCGGGCGACGGTTGTCCCGGTTTAAG
CGTGTAGGCTGGTTTTCCAGGCAAATCCGGAAAATCAAGGCTGAGGCGTGATGAC
GAGGCACTACGGTGCTGAAGCAACAAATGCCCTGCTTCCAGGAAAAGCCTCTAAG
CATCAGGTAACATCAAATCGTACCCCAAACCGACACAGGTGGTCAGGTAGAGAAT
ACCAAGGCGCTTGAGAGAACTCGGGTGAAGGAACTAGGCAAAATGGTGCCGTAAC
TTCGGGAGAAGGCACGCTGATATGTAGGTGAGGTCCCTCGCGGATGGAGCTGAA
ATCAGTCGAAGATACCAGCTGGCTGCAACTGTTTATTAAAAACACAGCACTGTGCA
AACACGAAAGTGGACGTATACGGTGTGACGCCTGCCCGGTGCCGGAAGGTTAATT
GATGGGGTTAGCGCAAGCGAAGCTCTTGATCGAAGCCCCGGTAAACGGCGGCCG
TAACTATAACGGTCCTAAGGTAGCGAAATTCCTTGTCGGGTAAGTTCCGACCTGCA
CGAATGGCGTAATGATGGCCAGGCTGTCTCCACCCGAGACTCAGTGAAATTGAAC
TCGCTGTGAAGATGCAGTGTACCCGCGGCAAGACGGAAAGACCCCGTGAACCTTT
ACTATAGCTTGACACTGAACATTGAGCCTTGATGTGTAGGATAGGTGGGAGGCTTT
GAAGTGTGGACGCCAGTCTGCATGGAGCCGACCTTGAAATACCACCCTTTAATGT
TTGATGTTCTAACGTTGACCCGTAATCCGGGTTGCGGACAGTGTCTGGTGGGTAG
TTTGACTGGGGCGGTCTCCTCCTAAAGAGTAACGGAGGAGCACGAAGGTTGGCTA
ATCCTGGTCGGACATCAGGAGGTTAGTGCAATGGCATAAGCCAGCTTGACTGCGA
GCGTGACGGCGCGAGCAGGTGCGAAAGCAGGTCATAGTGATCCGGTGGTTCTGA
ATGGAAGGGCCATCGCTCAACGGATAAAAGGTACTCCGGGGATAACAGGCTGATA
CCGCCCAAGAGTTCATATCGACGGCGGTGTTTGGCACCTCGATGTCGGCTCATCA
CATCCTGGGGCTGAAGTAGGTCCCAAGGGTATGGCTGTTCGCCATTTAAAGTGGT
ACGCGAGCTGGGTTTAGAACGTCGTGAGACAGTTCGGTCCCTATCTGCCGTGGGC
GCTGGAGAACTGAGGGGGGCTGCTCCTAGTACGAGAGGACCGGAGTGGACGCAT
CACTGGTGTTCGGGTTGTCATGCCAATGGCACTGCCCGGTAGCTAAATGCGGAAG
AGATAAGTGCTGAAAGCATCTAAGCACGAAACTTGCCCCGAGATGAGTTCTCCCT
GACCCTTTAAGGGTCCTGAAGGAACGTTGAAGACGACGACGTTGATAGGCCGGGT
GTGTAAGCGCAGCGATGCGTTGAGCTAACCGGTACTAATGAACCGTGAGGCTTAA
CCTTACAACGCCGAAGCTGTTTTGGCGGATGAGAGAAGATTTTCAGCCTGATACA
GATTAAATCAGAACGCAGAAGCGGTCTGATAAAACAGAATTTGCCTGGCGGCAGT
AGCGCGGTGGTCCCACCTGACCCCATGCCGAACTCAGAAGTGAAACGCCGTAGC

FIGURE 25 Cont.

GCCGATGGTAGTGTGGGGTCTCCCCATGCGAGAGTAGGGAACTGCCAGGCATCA
AATAAAACGAAAGGCTCAGTCGAAAGACTGGGCCTTTCGTTTTATCTGTTGTTTGT
CGGTGAACGCTCTCCTGAGTAGGACAAATCCGCCGGGAGCGGATTTGAACGTTGC
GAAGCAACGGCCCGGAGGGTGGCGGGCAGGACGCCCGCCATAAACTGCCAGGC
ATCAAATTAAGCAGAAGGCCATCCTGACGGATGGCCTTTTTGCGTTTCTACAAACT
CTTCCTGTCGTCATATCTACAAGCCATCCCCCCACAGATACGGTAAACTAGCCTCG
TTTTTGCATCAGGAAAGCAGCTATGAACCACTCCTTAAAACCCTGGAACACATTTG
GCATTGATCATAATGCTCAGCACATTGTATGGGCCTTAAGGGCCCAACAATTACTC
AATGCCTGGCAGTATGCAACCGCAGAAGGACAACCCGTTCTTATTCTGGGTGAAG
GAAGTAATGTACTTTTTCTGGAGGACTATCGCGGCACGGTGATCATCAACCGGAT
CAAAGGTATCGAAATTCATGATGAACCTGATGCGTGGTATTTACATGTAGGAGCCG
GAGAAAACTGGCATCGTCTGGTAAAATACACTTTGCAGGAAGGTATGCCTGGTCT
GGAAAATCTGGCATTAATTCCTGGTTGTGTCGGCTCATCACCTATCCAGAATATTG
GTGCTTATGGCGTAGAATTACAGCGAGTTTGCGCTTATGTTGATTCTGTTGAACTG
GCGACAGGCAAGCAAGTGCGCTTAACTGCCAAAGAGTGCCGTTTTGGCTATCGCG
ACAGTATTTTTAAACATGAATACCAGGACCGCTTCGCTATTGTAGCCGTAGGTCTG
CGTCTGCCAAAAGAGTGGCAACCTGTACTAACGTATGGTGACTTAACTCGTCTGG
GATCCACAGGACGGGTGTGGTCGCCATGATCGCGTAGTCGATAGTGGCTCCAAGT
AGCGAAGCGAGCAGGACTGGGCGGCGGCCAAAGCGGTCGGACAGTGCTCCGAG
AACGGGTGCGCATAGAAATTGCATCAACGCATATAGCGCTAGCAGCACGCCATAG
TGACTGGCGATGCTGTCGGAATGGACGATATCCCGCAAGAGGCCCGGCAGTACC
GGCATAACCAAGCCTATGCCTACAGCATCCAGGGTGACGGTGCCGAGGATGACG
ATGAGCGCATTGTTAGATTTCATACACGGTGCCTGACTGCGTTAGCAATTTAACTG
TGATAAACTACCGCATTAAAGCTTATCGATGATAAGCTGTCAAACATGAGAATTCTT
GAAGACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCATGATAATA
ATGGTTTCTTAGACGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTA
TTTGTTTATTTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTG
ATAAATGCTTCAATAATATTGAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGT
CGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCTGTTTTTGCTCACCCAGAAAC
GCTGGTGAAAGTAAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGTTACATC
GAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTT
TTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTGTT
GACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGG
TTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAA
TTATGCAGTGCTGCCATAACCATGAGTGATAACACTGCGGCCAACTTACTTCTGAC
AACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCAT
GTAACTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAAACGACG
AGCGTGACACCACGATGCCTGCAGCAATGGCAACAACGTTGCGCAAACTATTAAC
TGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCG
GATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTG
CTGATAAATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGG
GCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCA
ACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCACTGATTAAGCA
TTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACTTCAT
TTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAAATC
CCTTAACGTGAGTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGG

FIGURE 25 Cont.

ATCTTCTTGAGATCCTTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAAAAAACC
ACCGCTACCAGCGGTGGTTTGTTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGA
AGGTAACTGGCTTCAGCAGAGCGCAGATACCAAATACTGTCCTTCTAGTGTAGCC
GTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGC
TAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGTCTTACCGGGTT
GGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTCGGGCTGAACGGGGGG
TTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTA
CAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGG
TATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGG
GGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAG
CGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCA
ACGCGGCCTTTTTACGGTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATGTTCTTT
CCTGCGTTATCCCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGA
TACCGCTCGCCGCAGCCGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGC
GGAAGAGCGCCTGATGCGGTATTTTCTCCTTACGCATCTGTGCGGTATTTCACACC
GCATATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTTAAGCCAGTAT
ACACTCCGCTATCGCTACGTGACTGGGTCATGGCTGCGCCCCGACACCCGCCAAC
ACCCGCTGACGCGCCCTGACGGGCTTGTCTGCTCCCGGCATCCGCTTACAGACAA
GCTGTGACCGTCTCCGGGAGCTGCATGTGTCAGAGGTTTTCACCGTCATCACCGA
AACGCGCGAGGCAGCTGCGGTAAAGCTCATCAGCGTGGTCGTGAAGCGATTCAC
AGATGTCTGCCTGTTCATCCGCGTCCAGCTCGTTGAGTTTCTCCAGAAGCGTTAAT
GTCTGGCTTCTGATAAAGCGGGCCATGTTAAGGGCGGTTTTTTCCTGTTTGGTCAC
TTGATGCCTCCGTGTAAGGGGGAATTTCTGTTCATGGGGGTAATGATACCGATGA
AACGAGAGAGGATGCTCACGATACGGGTTACTGATGATGAACATGCCCGGTTACT
GGAACGTTGTGAGGGTAAACAACTGGCGGTATGGATGCGGCGGGACCAGAGAAA
AATCACTCAGGGTCAATGCCAGCGCTTCGTTAATACAGATGTAGGTGTTCCACAG
GGTAGCCAGCAGCATCCTGCGATGCCTGGCGAAAGGGGGATGTGCTGCAAGGCG
ATTAAGTTGGGTAACGCCAGGGTTTTCCCAGTCACGACGTTGTAAAACGACGGCC
AGTGAATTCGAGCTCGGTACCTGCACTGACGACAGGAAGAGTTTGTAGAAACGCA
AAAAGGCCATCCGTCAGGATGGCCTTCTGCTTAATTTGATGCCTGGCAGTTTATGG
CGGGCGTCCTGCCCGCCACCCTCCGGGCCGTTGCTTCGCAACGTTCAAATCCGC
TCCCGGCGGATTTGTCCTACTCAGGAGAGCGTTCACCGACAAACAACAGATAAAA
CGAAAGGCCCAGTCTTTCGACTGAGCCTTTCGTTTTATTTGATGCCTGGCAGTTCC
CTACTCTCGCATGGGGAGACCCCACACTACCATCGGCGCTACGACTAGATTATTT
GTAGAGCTCATCCATGCCATGTGTAATCCCAGCAGCAGTTACAAACTCAAGAAGGA
CCATGTGGTCACGCTTTTCGTTGGGATCTTTCGAAAGGGCAGATTGTGTCGACAG
GTAATGGTTGTCTGGTAAAAGGACAGGGCCATCGCCAATTGGAGTATTTTGTTGAT
AATGGTCTGCTAGTTGAACGGATCCATCTTCAATGTTGTGGCGAATTTTGAAGTTA
GCTTTGATTCCATTCTTTTGTTTGTCTGCCGTGATGTATACATTGTGTGAGTTATAG
TTGTACTCGAGTTTGTGTCCGAGAATGTTTCCATCTTCTTTAAAATCAATACCTTTT
AACTCGATACGATTAACAAGGGTATCACCTTCAAACTTGACTTCAGCACGCGTCTT
GTAGTTCCCGTCATCTTTGAAAGATATAGTGCGTTCCTGTACATAACCTTCGGGCA
TGGCACTCTTGAAAAAGTCATGCCGTTTCATATGATCCGGATAACGGGAAAAGCAT
TGAACACCATAAGAGAAAGTAGTGACAAGTGTTGGCCATGGAACAGGTAGTTTTCC
AGTAGTGCAAATAAATTTAAGGGTAAGCTTTCCGTATGTAGCATCACCTTCACCCT
CTCCACTGACAGAAAATTTGTGCCCATTAACATCACCATCTAATTCAACAAGAATTG

FIGURE 25 Cont.

GGACAACTCCAGTGAAAAGTTCTTCTCCTTTGCTCGCAGTGATTTTTTTCTCCATTT
GCGGAGGGATATGAAAGCGGCCGCTTCCACACATTAAACTAGTTCGATGATTAATT
GTCAACAGCTCGCCGGCGGCACCTCGCTAACGGATTCACCACTCCAAGAATTGGA
GCCAATCGATTCTTGCGGAGAACTGTGAATGCGGGTACCCAGATCCGGAACATAA
TGGTGCAGGGCGCTGACTTCCGCGTTTCCAGACTTTACGAAACACGGAAACCGAA
GACCATTCATGTTGTTGCTCAGGTCGCAGACGTTTTGCAGCAGCAGTCGCTTCAC
GTTCGCTCGCGTATCGGTGATTCATTCTGCTAACCAGTAAGGCAACCCCGCCAGC
CTAGCCGGGTCCTCAACGACAGGAGCACGATCATGCGCACCCGTGGCCAGGACC
CAACGCTGCCCGAGATGCGCCGCGTGCGGCTGCTGGAGATGGCGGACGCGATG
GATATGTTCTGCCAAGGGTTGGTTTGCGCATTCACAGTTCTCCGCAAGAATCGATT
GGCTCCAATTCTTGGAGTGGTGAATCCGTTAGCGAGGTGCCGCCGGCGAGCTGTT
GACAATTAATCATCGAACTAGTTTAATGTGTGGAAGCGGCCGCTTTCATATCCCTC
CGCAAATGGAGAAAAAAATCACTGGATATACCACCGTTGATATATCCCAATGGCAT
CGTAAAGAACATTTTGAGGCATTTCAGTCAGTTGCTCAATGTACCTATAACCAGAC
CGTTCAGCTGGATATTACGGCCTTTTTAAAGACCGTAAAGAAAAATAAGCACAAGT
TTTATCCGGCCTTTATTCACATTCTTGCCCGCCTGATGAATGCTCATCCGGAATTC
CGTATGGCAATGAAAGACGGTGAGCTGGTGATATGGGATAGTGTTCACCCTTGTT
ACACCGTTTTCCATGAGCAAACTGAAACGTTTTCATCGCTCTGGAGTGAATACCAC
GACGATTTCCGGCAGTTTCTACACATATATTCGCAAGATGTGGCGTGTTACGGTGA
AAACCTGGCCTATTTCCCTAAAGGGTTTATTGAGAATATGTTTTTCGTCTCAGCCAA
TCCCTGGGTGAGTTTCACCAGTTTTGATTTAAACGTGGCCAATATGGACAACTTCT
TCGCCCCCGTTTTCACCATGGGCAAATATTATACGCAAGGCGACAAGGTGCTGAT
GCCGCTGGCGATTCAGGTTCATCATGCCGTCTGTGATGGCTTCCATGTCGGCAGA
ATGCTTAATGAATTACAACAGTACTGCGATGAGTGGCAGGGCGGGGCGTAATTTTT
TTAAGGCAGTTATTGGTGCCCTTAAACGCCTGGTGCTACGCCTGAATAAGTGATAA
TAAGCGGATGAATGGCAGAAATTCGAAAGCAAATTCGACCCGGTCGTCGGTTCAG
GGCAGGGTCGTTAAATAGCCGCTTATGTCTATTGCTGGTTTACGGTTTATTGACTA
CCCGAAGCAGTGTGACCCTGTGCTTCTCAAATGCCTGAGGGCAGTTTGCTCAGGT
CTCCCGTGGGGGGGAATAATTAACGGTATGAGCCTTACGGCGGACGGATCGTGG
CCGCAAGTGGGTCCGGCTAGAGGATCCGACACCATCGAATGGTGCAAAACCTTTC
GCGGTATGGCATGATAGCGCCCGGAAGAGAGTCAATTCAGGGTGGTGAATGTGA
AACCAGTAACGTTATACGATGTCGCAGAGTATGCCGGTGTCTCTTATCAGACCGTT
TCCCGCGTGGTGAACCAGGCCAGCCACGTTTCTGCGAAAACGCGGGAAAAAGTG
GAAGCGGCGATGGCGGAGCTGAATTACATTCCCAACCGCGTGGCACAACAACTG
GCGGGCAAACAGTCGTTGCTGATTGGCGTTGCCACCTCCAGTCTGGCCCTGCAC
GCGCCGTCGCAAATTGTCGCGGCGATTAAATCTCGCGCCGATCAACTGGGTGCCA
GCGTGGTGGTGTCGATGGTAGAACGAAGCGGCGTCGAAGCCTGTAAAGCGGCGG
TGCACAATCTTCTCGCGCAACGGGTCAGTGGGCTGATCATTAACTATCCGCTGGA
TGACCAGGATGCCATTGCTGTGGAAGCTGCCTGCACTAATGTTCCGGCGTTATTT
CTTGATGTCTCTGACCAGACACCCATCAACAGTATTATTTTCTCCCATGAAGACGG
TACGCGACTGGGCGTGGAGCATCTGGTCGCATTGGGTCACCAGCAAATCGCGCT
GTTAGCGGGCCCATTAAGTTCTGTCTCGGCGCGTCTGCGTCTGGCTGGCTGGCAT
AAATATCTCACTCGCAATCAAATTCAGCCGATAGCGGAACGGGAAGGCGACTGGA
GTGCCATGTCCGGTTTTCAACAAACCATGCAAATGCTGAATGAGGGCATCGTTCCC
ACTGCGATGCTGGTTGCCAACGATCAGATGGCGCTGGGCGCAATGCGCGCCATT
ACCGAGTCCGGGCTGCGCGTTGGTGCGGATATCTCGGTAGTGGGATACGACGAT

FIGURE 25 Cont.

ACCGAAGACAGCTCATGTTATATCCCGCCGTCAACCACCATCAAACAGGATTTTCG
CCTGCTGGGGCAAACCAGCGcGGACCGCTTGCTGCAACTCTCTCAGGGCCAGGC
GGTGAAGGGCAATCAGCTGTTGCCCGTCTCACTGGTGAAAAGAAAAACCACCCTG
GCGCCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCATTAATGCAGC
TGGCACGACAGGTTTCCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAAT
GTGAGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCG
TATAATGTGTGGAATTGTGAGCGGATAACAATTTCACACAGCGGCCGCTGAGAAAA
AGCGAAGCGGCACTGCTCTTTAACAATTTATCAGACAATCTGTGTGGGCACTCGAA
GATACGGATTCTTAACGTCGCAAGACGAAAAATGAATACCAAGTCTCAAGAGTGAA
CACGTAATTCATTACGAAGTTTAATTCTTTGAGCGTCAAACTTTT

FIGURE 25 Cont.

AAATTGAAGAGTTTGATCATGGCTCAGATTGAACGCTGGCGGCAGGCCTAACACA
TGCAAGTCGAACGGTAACAGGAAGAAGCTTGCTTCTTTGCTGACGAGTGGCGGAC
GGGTGAGTAATGTCTGGGAAACTGCCTGATGGAGGGGGATAACTACTGGAAACG
GTAGCTAATACCGCATAACGTCGCAAGACCAAAGAGGGGGACCTTCGGGCCTCTT
GCCATCGGATGTGCCCAGATGGGATTAGCTAGTAGGTGGGGTAACGGCTCACCTA
GGCGACGATCCCTAGCTGGTCTGAGAGGATGACCAGCCACACTGGAACTGAGAC
ACGGTCCAGACTCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGCA
AGCCTGATGCAGCCATGCCGCGTGTATGAAGAAGGCCTTCGGGTTGTAAAGTACT
TTCAGCGGGGAGGAAGGGAGTAAAGTTAATACCTTTGCTCATTGACGTTACCCGC
AGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCA
AGCGTTAATCGGAATTACTGGGCGTAAAGCGCACGCAGGCGGTTTGTTAAGTCAG
ATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCTGATACTGGCAAGCTTGAG
TCTCGTAGAGGGGGGTAGAATTCCAGGTGTAGCGGTGAAATGCGTAGAGATCTGG
AGGAATACCGGTGGCGAAGGCGGCCCCCTGGACGAAGACTGACGCTCAGGTGCG
AAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGAT
GTCGACTTGGAGGTTGTGCCCTTGAGGCGTGGCTTCCGGAGCTAACGCGTTAAGT
CGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACTCAAATGAATTGACGGGGG
CCCGCACAAGCGGCGGAGCATGTGGATTAATTCGATGCAACGCGAAGAACCTTAC
CTGGGTTTGACATGCACAGGACGCGTCTAGAGATAGGCGTTCCCTTGTGGCCTGT
GTGCAGGTGGTGCATGGCTGTCGTCAGCTCGTGTCGTGAGATGTTGGGTTAAGTC
CCGCAACGAGCGCAACCCTTGTCTCATGTTGCCAGCACGTAATGGTGGGGACTCG
TGAGAGACTGCCGGGGTCAACTCGGAGGAAGGTGGGGATGACGTCAAGTCATCA
TGCCCCTTATGTCCAGGGCTTCACACATGCTACAATGGCCGGTACAAAGGGCTGC
GATGCCGCGAGGTTAAGCGAATCCTTAAAAGCCGGTCTCAGTTCGGATCGGGGTC
TGCAACTCGACCCCGTGAAGTCGGAGTCGCTAGTAATCGCAGATCAGCAACGCTG
CGGTGAATACGTTCCCGGGCCTTGTACACACCGCCCGTCACGTCATGAAAGTCGG
TAACACCCGAAGCCAGTGGCCTAACCCTCGGGAGGGAGCTGTCGAAGGTGGGAT
CGGCGATTGGGACGAAGTCGTAACAAGGTAACCGTAGGGGAACCTGCGGTTGGA
TCATGGGATTACCTTAAAGAAGCGTACTTTGTAGTGCTCACACAGATTGTCTGATA
GAAAGTGAAAAGCAAGGCGTTTACGCGTTGGGAGTGAGGCTGAAGAGAATAAGG
CCGTTCGCTTTCTATTAATGAAAGCTCACCCTACACGAAAATATCACGCAACGCGT
GATAAGCAATTTTCGTGTCCCCTTCGTCTAGACGTAGCGCCGATGGTAGTGTGGG
GTCTCCCCATGCGAGAGTAGGGAACTGCCAGGCATCAAATAAAACGAAAGGCTCA
GTCGAAAGACTGGGCCTTTCGTTTTATCTGTTGTTTGTCGGTGAACGCTCTCCTGA
GTAGGACAAATCCGCCGGGAGCGGATTTGAACGTTGCGAAGCAACGGCCCGGAG
GGTGGCGGGCAGGACGCCCGCCATAAACTGCCAGGCATCAAATTAAGCAGAAGG
CCATCCTGACGGATGGCCTTTTTGCGTTTCTACAAACTCTTCCTGTCGTCACTGCA
GGCATGCAAGCTTGGCGTAATCATGGTCATAGCTGTTTCCTGTGTGAAATTGTTAT
CCGCTCACAATTCCACACAACATACGAGCCGGAAGCATAAAGTGTAAAGCCTGGG
GTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGCCCGCTTTC
CAGTCGGGAAACCTGTCGTGCCAGCTGCATTAATGAATCGGCCAACGCGCGGGG
AGAGGCGGTTTGCGTATTGGGCGCTCTTCCGCTTCCTCGCTCACTGACTCGCTGC
GCTCGGTCGTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATAC
GGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCA
GCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTC
CGCCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACC

FIGURE 26

CGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTC
TCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCCTTTCTCCCTTCGGGA
AGCGTGGCGCTTTCTCATAGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTCG
TTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTCAGCCCGACCGCTGCG
CCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCA
CTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCT
ACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTG
GTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGA
TCCGGCAAACAAACCACCGCTGGTAGCGGTGGTTTTTTTGTTTGCAAGCAGCAGA
TTACGCGCAGAAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCT
GACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGAGATTATCAAA
AAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGT
ATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTAT
CTCAGCGATCTGTCTATTTCGTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGA
TAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCG
AGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGG
GCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTG
TTGCCGGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTG
CCATTGCTACAGGCATCGTGGTGTCACGCTCGTCGTTTGGTATGGCTTCATTCAG
CTCCGGTTCCCAACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAA
GCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCAGTGT
TATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAA
GATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATG
CGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACATA
GCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACTCTCA
AGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTG
ATCTTCAGCATCTTTTACTTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGC
AAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTC
TTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATAC
ATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGA
AAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAAT
AGGCGTATCACGAGGCCCTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACC
TCTGACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGG
GAGCAGACAAGCCCGTCAGGGCGCGTCAGCGGGTGTTGGCGGGTGTCGGGGCT
GGCTTAACTATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATATGCGGTG
TGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCGCCATTCGCCA
TTCAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTAC
GCCAGCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAGTTGGGTAACGCCAG
GGTTTTCCCAGTCACGACGTTGTAAAACGACGGCCAGTGAATTCGAGCTCGGTAC
CTGCAGTGACGACAGGAAGAGTTTGTAGAAACGCAAAAAGGCCATCCGTCAGGAT
GGCCTTCTGCTTAATTTGATGCCTGGCAGTTTATGGCGGGCGTCCTGCCCGCCAC
CCTCCGGGCCGTTGCTTCGCAACGTTCAAATCCGCTCCCGGCGGATTTGTCCTAC
TCAGGAGAGCGTTCACCGACAAACAACAGATAAAACGAAAGGCCCAGTCTTTCGA
CTGAGCCTTTCGTTTTATTTGATGCCTGGCAGTTCCCTACTCTCGCATGGGGAGAC
CCCACACTACCATCGGCGCTACGTCTAGATTATTTGTAGAGCTCATCCATGCCATG
TGTAATCCCAGCAGCAGTTACAAACTCAAGAAGGACCATGTGGTCACGCTTTTCGT

FIGURE 26 Cont.

TGGGATCTTTCGAAAGGGCAGATTGTGTCGACAGGTAATGGTTGTCTGGTAAAAG
GACAGGGCCATCGCCAATTGGAGTATTTTGTTGATAATGGTCTGCTAGTTGAACGG
ATCCATCTTCAATGTTGTGGCGAATTTTGAAGTTAGCTTTGATTCCATTCTTTTGTT
TGTCTGCCGTGATGTATACATTGTGTGAGTTATAGTTGTACTCGAGTTTGTGTCCG
AGAATGTTTCCATCTTCTTTAAAATCAATACCTTTTAACTCGATACGATTAACAAGG
GTATCACCTTCAAACTTGACTTCAGCACGCGTCTTGTAGTTCCCGTCATCTTTGAA
AGATATAGTGCGTTCCTGTACATAACCTTCGGGCATGGCACTCTTGAAAAAGTCAT
GCCGTTTCATATGATCCGGATAACGGGAAAAGCATTGAACACCATAAGAGAAAGTA
GTGACAAGTGTTGGCCATGGAACAGGTAGTTTTCCAGTAGTGCAAATAAATTTAAG
GGTAAGCTTTCCGTATGTAGCATCACCTTCACCCTCTCCACTGACAGAAAATTTGT
GCCCATTAACATCACCATCTAATTCAACAAGAATTGGGACAACTCCAGTGAAAAGT
TCTTCTCCTTTGCTAGCAGTGATTTTTTTCTCCATTTGCGGAGGGATATGAAAGCG
GCCGCTTCCACACATTAAACTAGTTCGATGATTAATTGTCAACAGCTCGCCGGCGG
CACCTCGCTAACGGATTCACCACTCCAAGAATTGGAGCCAATCGATTCTTGCGGA
GAACTGTGAATGCGGGTACCCAGATCCGGAACATAATGGTGCAGGGCGCTGACTT
CCGCGTTTCCAGACTTTACGAAACACGGAAACCGAAGACCATTCATGTTGTTGCTC
AGGTCGCAGACGTTTTGCAGCAGCAGTCGCTTCACGTTCGCTCGCGTATCGGTGA
TTCATTCTGCTAACCAGTAAGGCAACCCCGCCAGCCTAGCCGGGTCCTCAACGAC
AGGAGCACGATCATGCGCACCCGTGGCCAGGACCCAACGCTGCCCGAGATGCGC
CGCGTGCGGCTGCTGGAGATGGCGGACGCGATGGATATGTTCTGCCAAGGGTTG
GTTTGCGCATTCACAGTTCTCCGCAAGAATCGATTGGCTCCAATTCTTGGAGTGGT
GAATCCGTTAGCGAGGTGCCGCCGGCGAGCTGTTGACAATTAATCATCGAACTAG
TTTAATGTGTGGAAGCGGCCGCTTTCATATCCCTCCGCAAATGGAGAAAAAAATCA
CTGGATATACCACCGTTGATATATCCCAATGGCATCGTAAAGAACATTTTGAGGCA
TTTCAGTCAGTTGCTCAATGTACCTATAACCAGACCGTTCAGCTGGATATTACGGC
CTTTTTAAAGACCGTAAAGAAAAATAAGCACAAGTTTTATCCGGCCTTTATTCACAT
TCTTGCCCGCCTGATGAATGCTCATCCGGAATTCCGTATGGCAATGAAAGACGGT
GAGCTGGTGATATGGGATAGTGTTCACCCTTGTTACACCGTTTTCCATGAGCAAAC
TGAAACGTTTTCATCGCTCTGGAGTGAATACCACGACGATTTCCGGCAGTTTCTAC
ACATATATTCGCAAGATGTGGCGTGTTACGGTGAAAACCTGGCCTATTTCCCTAAA
GGGTTTATTGAGAATATGTTTTTCGTCTCAGCCAATCCCTGGGTGAGTTTCACCAG
TTTTGATTTAAACGTGGCCAATATGGACAACTTCTTCGCCCCCGTTTTCACCATGG
GCAAATATTATACGCAAGGCGACAAGGTGCTGATGCCGCTGGCGATTCAGGTTCA
TCATGCCGTCTGTGATGGCTTCCATGTCGGCAGAATGCTTAATGAATTACAACAGT
ACTGCGATGAGTGGCAGGGCGGGGCGTAATTTTTTTAAGGCAGTTATTGGTGCCC
TTAAACGCCTGGTGCTACGCCTGAATAAGTGATAATAAGCGGATGAATGGCAGAA
ATTCGAAAGCAAATTCGACCCGGTCGTCGGTTCAGGGCAGGGTCGTTAAATAGCC
GCTTATGTCTATTGCTGGTTTACGGTTTATTGACTACCCGAAGCAGTGTGACCCTG
TGCTTCTCAAATGCCTGAGGGCAGTTTGCTCAGGTCTCCCGTGGGGGGGAATAAT
TAACGGTATGAGCCTTACGGCGGACGGATCGTGGCCGCAAGTGGGTCCGGCTAG
AGGATCCGACACCATCGAATGGTGCAAAACCTTTCGCGGTATGGCATGATAGCGC
CCGGAAGAGAGTCAATTCAGGGTGGTGAATGTGAAACCAGTAACGTTATACGATG
TCGCAGAGTATGCCGGTGTCTCTTATCAGACCGTTTCCCGCGTGGTGAACCAGGC
CAGCCACGTTTCTGCGAAAACGCGGGAAAAAGTGGAAGCGGCGATGGCGGAGCT
GAATTACATTCCCAACCGCGTGGCACAACAACTGGCGGGCAAACAGTCGTTGCTG
ATTGGCGTTGCCACCTCCAGTCTGGCCCTGCACGCGCCGTCGCAAATTGTCGCG

FIGURE 26 Cont.

GCGATTAAATCTCGCGCCGATCAACTGGGTGCCAGCGTGGTGGTGTCGATGGTAG
AACGAAGCGGCGTCGAAGCCTGTAAAGCGGCGGTGCACAATCTTCTCGCGCAAC
GGGTCAGTGGGCTGATTATTAACTATCCGCTGGATGACCAGGATGCCATTGCTGT
GGAAGCTGCCTGCACTAATGTTCCGGCGTTATTTCTTGATGTCTCTGACCAGACAC
CCATCAACAGTATTATTTTCTCCCATGAAGACGGTACGCGACTGGGCGTGGAGCA
TCTGGTCGCATTGGGcCACCAGCAAATCGCGCTGTTAGCGGGCCCATTAAGTTCT
GTCTCGGCGCGTCTGCGTCTGGCTGGCTGGCATAAATATCTCACTCGCAATCAAA
TTCAGCCGATAGCGGAACGGGAAGGCGACTGGAGTGCCATGTCCGGTTTTCAACA
AACCATGCAAATGCTGAATGAGGGCATCGTTCCCACTGCGATGCTGGTTGCCAAC
GATCAGATGGCGCTGGGCGCAATGCGCGCCATTACCGAGTCCGGGCTGCGCGTT
GGTGCGGATATCTCGGTAGTGGGATACGACGATACCGAAGACAGCTCATGTTATA
TCCCGCCGTCAACCACCATCAAACAGGATTTTCGCCTGCTGGGGCAAACCAGCGT
GGACCGCTTGCTGCAACTCTCTCAGGGCCAGGCGGTGAAGGGCAATCAGCTGTT
GCCCGTCTCACTGGTGAAAAGAAAAACCACCCTGGCGCCCAATACGCAAACCGCC
TCTCCCCGCGCGTTGGCCGATTCATTAATGCAGCTGGCACGACAGGTTTCCCGAC
TGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGG
CACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATAATGTGTGGAATTGTGAGC
GGATAACAATTTCACACAGCGGCCGCTGAGAAAAAGCGAAGCGGCACTGCTCTTT
AACAATTTATCAGACAATCTGTGTGGGCACTCGAAGATACGGATTCTTAACGTCGC
AAGACGAAAAATGAATACCAAGTCTCAAGAGTGAACACGTAATTCATTACGAAGTT
TAATTCTTTGAGCGTCAAACTTTT

FIGURE 26 Cont.